

SCENIC RESERVES OF THE MOTU ROAD FIELD TRIP

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A small group of seven Rotorua Botanical Society members and associates from Hamilton, Rotorua and Gisborne met in Motu township at lunchtime on Friday 26 February 2010 for a three day exploration of some of the many DOC reserves scattered through the remote hillcountry in and around the Motu Road which stretches from Matawai in the south to the coastal highway (SH 35) to the east of Opotiki. The vegetation and flora of all the Motu Road reserves has been well documented in the West Gisborne report of the Biological Survey of Reserves series (Clarkson and Regnier 1989) with a vegetation map and vascular plant species list which formed the basis for our botanising.

Our first visit for the afternoon was to Motu Scenic Reserve (SR), a stunning 20 ha DOC reserve just across the road from Motu School, our accommodation for the night. Motu SR consists of predominantly kahikatea (*Dacrycarpus dacrydioides*) forest around an old cut off river loop of the Motu River. The reserve is the only publicly accessible protected stand of kahikatea forest remaining in the valley. Scattered trees between Motu township and Matawai bear testament to the remains of what must have once been a huge tract of kahikatea forest along the floodplain of the Motu River in this area.

We entered through the main gate into the reserve from where we could admire the river loop fringed with raupo (*Typha orientalis*) and kahikatea forest. We progressively made our way clockwise around the edge of the river loop. Soon we were away from the weedy exotic pasture around the margins of the reserve and into the forest under the kahikatea. Here lacebark (*Hoheria sexstylosa*) and lemonwood (*Pittosporum eugenioides*) were common along with *Coprosma tenuicaulis* and *Coprosma rotundifolia*.

Moving around the river loop we moved into the lacebark–kaikomako–wheki–ponga–lemonwood forest with a good range of divaricating understorey shrubs including *Neomyrtus pedunculatus*, *Melicope simplex*, *Raukawa anomalus*, *Lophomyrtus obcordata*. *Leptopteris hymenophylloides*, *L. superba* and their hybrids were also common in the understorey. A few *Nestegis lanceolata* and *Myrsine salicina* were also noted in the canopy.



Botsoc members at Motu Scenic Reserve (Photo: Paul Cashmore)

As water levels were low we were able to edge out of the forest at various places and botanise the edges of the river loops. Apart from the occasional blackberry (*Rubus fruticosus* agg.) the margins were dominated by *Coprosma tenuicaulis*, with *Carex virgata* on wetter margins. Where raupo wasn't present the open water areas were fringed with abundant *Persicaria hydropiper* with local *Galium palustre*, *Bidens frondosa* and *Ludwigia palustris*. *Glyceria declinata* was also noted in one of the drier areas where we were able to cross into the next section of forest.

Of concern were the intermittent infestations of *Selaginella kraussiana* we kept coming across and also, as we got closer to the south–eastern forest margin, vines

of ivy (*Hedera helix*). Some of this troublesome bird-dispersed weed had been controlled to date by DOC but we certainly found further infestations. After removing some large vines we proceeded along the forest margin and onto Philips Road having spent the afternoon in the reserve.

After our Gisborne counterpart left us the rest of us set up camp on the bark chips on the Motu School playground and settled in for a rather cold February night. After a reasonable night's sleep punctuated by snoring we packed up and headed down the road to meet up with an Opotiki member joining us for the day. Leaving a car at the bottom of Whinray Scenic Reserve, the group drove to the start of the public walking track at the top of the Reserve. Following the widely benched track downhill through the reserve we stopped regularly to admire the vegetation which was predominantly emergent rimu (*Dacrydium cupressinum*) over a tawa (*Beilschmiedia tawa*)-rewarewa (*Knightsia excelsa*) canopy on the hill slopes with emergent kahikatea more common towards the gully bottoms and lower slopes. Kamahi (*Weinmannia racemosa*) was common in the subcanopy with tawari (*Ixerba brexioides*) also present.

Although a substantial tract of forest at 396 ha, the vegetation type changed little during the journey downhill. In one place we left the track and following the stream for a short section looking for new species to add to the existing vascular plant species list. This section had numerous filmy ferns including *Hymenophyllum scabrum*, a new addition to the list. While some additions were made, including *Blechnum vulcanicum*, no major discoveries were made.

We reached the road mid-afternoon and regrouped while I went back to give the school principal a koha (in this case a botanical book) for using the school grounds. We headed north out of town along the Motu Road through Whitiakau and Toatoa Scenic Reserves stopping briefly to admire vegetation and views. Unfortunately there was no time to properly study the flora of these large blocks but with the windy road we were able to take our time driving through. Turning

off the Motu Rd, we followed Takaputahi Rd down to the Takaputahi River and the DOC Whitiakau campground where we set up camp for the second night.

On Sunday morning we took our vehicles across the river and parked at the start of the Otipi Rd, a 4WD drive road which heads into the Raukumara Forest Park. This was originally put in for hydro investigation but now provides 4WD access into the Motu River and surrounding forests. We chose the slower and safer walking option and headed uphill through some rather nasty washed out sections before the gradient flattened out a bit and the condition of the road improved.

Sidling up towards the ridge the road gave us some excellent views up the valley to appreciate the forests of the Raukumara Range. The vegetation type was predominantly scattered emergent rimu and northern rata (*Metrosideros robusta*) over a canopy of tawa with a subcanopy dominated by kamahi on very steep slopes. This forest type and topography is typical of much of the hill country in the Bay of Plenty including the Motu Road. Hard beech (*Nothofagus truncata*) was scattered throughout but formed denser stands including pole stands on ridges with toatoa (*Phyllocladus toatoa*) in places. It was particularly pleasing to see some reasonably healthy emergent northern rata in the block with an abundance of saplings and small trees thriving on the road cuttings and slips beside the Otipi Road.

Other species of significance we noted along the Otipi Road margins included a small patch of *Orthoceras novae-zelandiae*, and some local *Libertia ixioides*. It was also interesting to note the weed species that were creeping in along the road – Himalayan fairy grass (*Miscanthus nepalensis*) and *Selaginella kraussiana* (probably being spread by vehicles) were the two of major concern. With one carload of members electing to head home the remaining three including myself continued on for another hour along the ridge, still climbing mainly through hard beech forest. Stopping for lunch on the ridge we chatted to some hunters coming out on their horses before electing to head back, having covered only a fraction of the

length of the road. Back at the cars we decided a quick cooling swim in the river was worthwhile before we headed off.

From here we continued north admiring the vegetation of Meremere Hill Scenic Reserve on the way home and noting changes in vegetation as we dropped sharply in altitude from the top of Meremere Hill to the river flats below. The roadside vegetation changed from predominantly indigenous vegetation to large areas of Himalayan fairy grass to predominantly kikuyu (*Pennisetum clandestinum*) as we reached the warmer climates near sea level.

From here we made our way back out to the relative civilisation of Opotiki, pleased that we had at least made an effort to sample the vegetation of the Motu Road. The distance to get there, the sheer size of the reserves, the lack of tracks and the steep country make the Motu one of the more challenging areas for the RBS to explore. We all agreed that given these challenges three days is a minimum to do it justice and that is only scratching the surface.

REFERENCE

Clarkson, B.R. and Regnier, C.E. (1989): Scenic reserves of west Gisborne. *Biological Survey of Reserves Report No. 16*. Department of Conservation, Wellington.



Relaxing in style at Motu School (Photo: Paul Cashmore)

**VASCULAR FLORA OF MOTU AND WHINRAY SCENIC RESERVES
AND OTIPI RD, RAUKUMARA FOREST PARK**

Compiled by John F.F. Hobbs ¹

Ferns and fern allies	Common Name	MSR[†]	WSR	RFP
<i>Asplenium bulbiferum</i>	hen and chickens fern	√	√	√
<i>Asplenium flaccidum</i>	hanging spleenwort	√	√	√
<i>Asplenium oblongifolium</i>	shining spleenwort		√	√
<i>Asplenium polyodon</i>	sickle spleenwort	√	√	
<i>Blechnum chambersii</i>	lance fern	√	√	√
<i>Blechnum colensoi</i>	peretao	√	√	√
<i>Blechnum discolor</i>	crown fern	√	√	√
<i>Blechnum fluviatile</i>	kiwakiwa	√	√	√
<i>Blechnum membranaceum</i>		√	√	
<i>Blechnum minus</i>	swamp kiokio	√	√	
<i>Blechnum novae-zelandiae</i>	kiokio	√	√	√
<i>Blechnum penna-marina</i>	alpine blechnum		√	
<i>Blechnum vulcanicum</i>	korokio	√	√	
<i>Cardiomanes reniforme</i>	kidney fern		√	√
<i>Ctenopteris heterophylla</i>			√	√
<i>Cyathea cunninghamii</i>	gully tree fern			√
<i>Cyathea dealbata</i>	silver fern	√	√	√
<i>Cyathea medullaris</i>	mamaku		√	√
<i>Cyathea smithii</i>	soft-leaved tree fern	√	√	√
<i>Dicksonia fibrosa</i>	wheki-ponga	√	√	√
<i>Dicksonia lanata</i> var. <i>lanata</i>	stumpy tree fern		√	
<i>Dicksonia squarrosa</i>	wheki	√	√	√
<i>Diplazium australe</i>	southern lady fern	√		√
<i>Doodia australis</i>	rasp fern			√
<i>Grammitis billardierei</i>	common finger fern			√
<i>Histiopteris incisa</i>	water fern		√	√
<i>Huperzia varia</i>	hanging clubmoss		√	√
<i>Hymenophyllum demissum</i>	irirangi	√	√	√
<i>Hymenophyllum dilatatum</i>	lop-sided filmy fern		√	√
<i>Hymenophyllum flabellatum</i>	fan fern	√	√	
<i>Hymenophyllum multifidum</i>	filmy fern		√	
<i>Hymenophyllum rarum</i>	wire-stemmed filmy fern		√	√
<i>Hymenophyllum revolutum</i>	filmy fern	√	√	√

¹ MSR = Motu Scenic Reserve : data from Clarkson, Regnier (1985), Thorsen (2003) and Rotorua Botanical Society Field Trip 2010 (RBSFT)

WSR = Whinray Scenic Reserve : data from Clarkson, Regnier (1985) and RBSFT

RFP = Raukumara Forest Park: data from RBSFT

<i>Hymenophyllum sanguinolentum</i>	blood-scented filmy fern	√	√	√
<i>Hymenophyllum scabrum</i>	hairy filmy fern		√	
<i>Hypolepis ambigua</i>	pig fern			√
<i>Hypolepis rufobarbata</i>				√
<i>Leptolepia novae-zelandiae</i>	hares-foot fern		√	
<i>Leptopteris hymenophylloides</i>	heruheru	√	√	
<i>Leptopteris hymenophylloides</i> × <i>L. superba</i>		√	√	
<i>Leptopteris superba</i>	Prince of Wales feathers	√	√	
<i>Lindsaea trichomanoides</i>			√	
<i>Lycopodium scariosum</i>	creeping clubmoss			√
<i>Lycopodium volubile</i>	climbing clubmoss		√	√
<i>Microsorium novae-zelandiae</i>	fragrant fern		√	
<i>Microsorium pustulatum</i> subsp. <i>pustulatum</i>	hounds tongue fern	√	√	√
<i>Microsorium scandens</i>	fragrant fern	√		
<i>Paesia scaberula</i>	scented fern	√	√	√
<i>Pneumatopteris pennigera</i>	gully fern	√	√	
<i>Polystichum silvaticum</i>	shield fern	√	√	
<i>Polystichum vestitum</i>	prickly shield fern	√	√	√
<i>Polystichum wanranum</i>	common shield fern	√	√	
<i>Pteridium esculentum</i>	bracken	√	√	
<i>Pteris macilenta</i>	sweet fern			√
<i>Pteris tremula</i>	shaking brake			√
<i>Pyrrosia eleagnifolia</i>	leather-leaf fern	√	√	√
<i>Rumohra adiantiformis</i>	leathery shield fern		√	√
* <i>Selaginella kraussiana</i>	selaginella	√	√	√
<i>Sticherus cunninghamii</i>	umbrella fern		√	√
<i>Tmesipteris elongata</i>	fork fern		√	√
<i>Trichomanes venosum</i>	veined bristle fern	√	√	

Gymnosperms

* <i>Chamaecyparis lawsoniana</i>	Lawson cypress	√		
* <i>Cupressus macrocarpa</i>	macrocarpa	√		
<i>Dacrycarpus dacrydioides</i>	kahikatea	√	√	
<i>Dacrydium cupressinum</i>	rimu red pine	√	√	√
<i>Libocedrus plumosa</i>	kawaka		√	
<i>Phyllocladus toatoa</i>	toatoa			√
<i>Phyllocladus trichomanoides</i>	tanekaha		√	
* <i>Pinus radiata</i>	radiata pine	√		
<i>Podocarpus hallii</i>	Hall's totara		√	√
<i>Podocarpus totara</i>	totara			√
<i>Prumnopitys ferruginea</i>	miro	√	√	√
<i>Prumnopitys taxifolia</i>	matai	√	√	

* <i>Pseudotsuga menziesii</i>	Douglas fir	✓		
* <i>Thuja plicata</i>	western red cedar	✓		

Dicotyledons

<i>Acaena anserinifolia</i>	bidibid	✓	✓	✓
<i>Acaena novae-zelandiae</i>	piripiri	✓	✓	
* <i>Achillea millefolium</i>	yarrow		✓	
<i>Alsenosmia pusilla</i>	karapapa	✓	✓	✓
* <i>Anagallis arvensis</i> var. <i>arvensis</i>	scarlet pimpernel		✓	✓
<i>Aristotelia fruticosa</i>	mountain wineberry	✓		
<i>Aristotelia serrata</i>	wineberry	✓	✓	✓
<i>Australina pusilla</i>			✓	
<i>Beilschmiedia tawa</i>	tawa	✓	✓	✓
* <i>Berberis darwinii</i>	Darwin's barberry	✓		
* <i>Berberis glaucocarpa</i>	barberry	✓		
* <i>Bidens frondosa</i>	beggars' ticks	✓		
<i>Brachyglottis repanda</i>	rangiora	✓	✓	
<i>Callitriche muelleri</i>	starwort		✓	✓
<i>Callitriche petriei</i>	starwort	✓	✓	
* <i>Callitriche stagnalis</i>	starwort	✓	✓	
* <i>Calystegia silvatica</i>	great bindweed	✓		
<i>Cardamine debilis</i> agg.	bitter cress	✓	✓	✓
* <i>Cardamine flexuosa</i>	wavy bitter cress	✓		
* <i>Cardamine hirsuta</i>	bitter cress	✓		
<i>Carpodetus serratus</i>	putaputaweta	✓	✓	✓
* <i>Centaureum erythraea</i>	centaury			✓
<i>Centella uniflora</i>	centella			✓
* <i>Cerastium fontanum</i> subsp. <i>vulgare</i>	mouse-eared chickweed	✓	✓	
* <i>Cirsium arvense</i>	Californian thistle	✓	✓	
* <i>Cirsium palustre</i>	marsh thistle	✓	✓	✓
* <i>Cirsium vulgare</i>	Scotch thistle	✓	✓	✓
<i>Clematis cunninghamii</i>	scented clematis	✓	✓	✓
<i>Clematis foetida</i>		✓		
<i>Clematis forsteri</i>	green clematis	✓	✓	
<i>Clematis paniculata</i>	puawhananga		✓	✓
* <i>Clematis vitalba</i>	old man's beard		✓	
* <i>Conyza sumatrensis</i>	broad-leaved fleabane	✓	✓	
<i>Coprosma</i> × <i>cunninghamii</i>		✓		
<i>Coprosma foetidissima</i>	stinkwood		✓	✓
<i>Coprosma grandifolia</i>	kanono	✓	✓	✓
<i>Coprosma lucida</i>	shining karamu		✓	✓
<i>Coprosma rhamnoides</i>	red-fruited coprosma	✓	✓	
<i>Coprosma robusta</i>	karamu	✓	✓	✓
<i>Coprosma rotundifolia</i>	round-leaved coprosma	✓	✓	
<i>Coprosma rubra</i>		✓	✓	

<i>Coprosma spathulata</i>		✓		
<i>Coprosma tayloriae</i>		✓	✓	
<i>Coprosma tenuicaulis</i>	swamp coprosma	✓	✓	
<i>Coprosma tenuifolia</i>	wavy-leaved coprosma		✓	
<i>Coriaria arborea</i> var. <i>arborea</i>	tree tutu	✓	✓	✓
* <i>Cotoneaster glaucophyllus</i> f. <i>serotina</i>	cotoneaster	✓		
* <i>Crepis capillaris</i>	hawksbeard	✓	✓	✓
* <i>Daucus carota</i>	wild carrot			✓
* <i>Digitalis purpurea</i>	foxglove	✓	✓	✓
<i>Dracophyllum latifolium</i>	needle-leaved neinei		✓	✓
<i>Elaeocarpus dentatus</i>	hinau	✓	✓	✓
<i>Elaeocarpus hookerianus</i>	pokaka	✓	✓	
<i>Epilobium brunnescens</i> subsp. <i>brunnescens</i>	creeping willow-herb		✓	
* <i>Epilobium ciliatum</i>	tall willow-herb	✓	✓	
<i>Epilobium cinereum</i>	willow-herb			✓
<i>Epilobium nerteroides</i>	creeping willow-herb	✓	✓	
<i>Epilobium nummulariifolium</i>	creeping willow-herb		✓	
* <i>Epilobium obscurum</i>	tall willow-herb		✓	
<i>Epilobium pallidiflorum</i>	willow-herb	✓	✓	
<i>Epilobium pedunculare</i>	creeping willow-herb		✓	
<i>Epilobium rotundifolium</i>	round-leaved willowherb		✓	✓
<i>Erechtites hieracifolia</i>	America fireweed			✓
<i>Euchiton andax</i>	creeping cudweed		✓	
<i>Euchiton collinus</i>	creeping cudweed			✓
<i>Fuchsia excorticata</i>	fuchsia; kotukutuku	✓	✓	✓
<i>Fuchsia excorticata</i> × <i>F. perscandens</i>		✓		
<i>Fuchsia perscandens</i>	scrambling fuchsia	✓		
* <i>Galium aparine</i>	cleavers	✓	✓	✓
<i>Galium palustre</i>	marsh bedstraw	✓		
<i>Galium perpusillum</i>		✓		
<i>Galium propinquum</i>			✓	
<i>Gaultheria antipoda</i>	snowberry		✓	✓
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange		✓	✓
<i>Geranium potentilloides</i>	cranesbill	✓		
* <i>Geranium robertianum</i>	herb Robert	✓	✓	
<i>Gonocarpus micranthus</i>			✓	✓
<i>Gratiola sexdentata</i>		✓		
<i>Griselinia littoralis</i>	broadleaf	✓	✓	✓
<i>Griselinia lucida</i>	puka			✓
<i>Gunnera monoica</i>	solitary gunnera			✓
<i>Haloragis erecta</i> subsp. <i>erecta</i>	toatoa	✓	✓	
<i>Hebe stricta</i> var. <i>stricta</i>	koromiko	✓	✓	✓
* <i>Hedera helix</i>	ivy	✓		

<i>Hedycarya arborea</i>	pigeonwood			√
<i>Hoberia sexstylosa</i>	houhere	√	√	√
* <i>Humulus lupulus</i>	hop	√		
<i>Hydrocotyle elongata</i>	hydrocotyle	√	√	
<i>Hydrocotyle heteromeria</i>	hydrocotyle			√
<i>Hydrocotyle microphylla</i>	hydrocotyle	√	√	
<i>Hydrocotyle moschata</i> var. <i>moschata</i>	hydrocotyle		√	
<i>Hydrocotyle novae-zeelandiae</i> var. <i>novae-zeelandiae</i>	common pennywort	√	√	
<i>Hydrocotyle pterocarpa</i>	hydrocotyle		√	
* <i>Hypericum androsaemum</i>	tutsan	√	√	√
* <i>Hypochoeris radicata</i>	catsear	√	√	√
<i>Ixerba brexioides</i>	tawari	√	√	√
* <i>Jacobaea vulgaris</i>	ragwort	√	√	√
* <i>Juglans ailantifolia</i>	Japanese walnut	√		
<i>Knightia excelsa</i>	rewarewa	√	√	√
* <i>Lapsana communis</i>	nipplewort	√		
<i>Leptinella squalida</i> subsp. <i>squalida</i>	fern-leaf pincushion		√	
<i>Leptospermum scoparium</i>	manuka			√
<i>Leucopogon fasciculatus</i>	mingimingi	√	√	√
* <i>Leycesteria formosa</i>	Himalayan honeysuckle	√		
* <i>Linum bienne</i>	pale flax		√	√
* <i>Linum catharticum</i>	purging flax		√	√
<i>Lobelia angulata</i>	panakenake		√	√
* <i>Lonicera japonica</i>	Japanese honeysuckle	√		
<i>Lophomyrtus bullata</i>	ramarama	√		
<i>Lophomyrtus bullata</i> × <i>L. obcordata</i>		√		
<i>Lophomyrtus obcordata</i>	rohutu	√		
* <i>Lotus pedunculatus</i>	lotus	√	√	√
* <i>Lotus suaveolens</i>	hairy birdsfoot trefoil			√
* <i>Ludwigia palustris</i>	water purslane	√		√
* <i>Lythrum hyssopifolia</i>	hyssop loosestrife		√	√
* <i>Matricaria discoidea</i>	rayless chamomile			√
<i>Melicope simplex</i>	poataniwha	√	√	
<i>Melicytus lanceolatus</i> var. <i>lanceolatus</i>	narrow-leaved mahoe	√	√	
<i>Melicytus ramiflorus</i>	mahoe	√	√	
* <i>Mentha pulegium</i>	pennyroyal			√
* <i>Mentha suaveolens</i>	apple mint			√
<i>Metrosideros diffusa</i>	white climbing rata	√	√	√
<i>Metrosideros fulgens</i>	winter rata		√	√
<i>Metrosideros perforata</i>	small white rata		√	√
<i>Metrosideros robusta</i>	northern rata		√	√
* <i>Mimulus moschatus</i>	monkey musk		√	
<i>Muehlenbeckia australis</i>	pohuehue	√	√	√
* <i>Mycelis muralis</i>	wall lettuce	√	√	√

* <i>Myosotis laxa</i> subsp. <i>caespitosa</i>	water forget-me-not	✓		
<i>Myriophyllum propinquum</i>	water milfoil	✓		
<i>Myrsine australis</i>	mapou		✓	✓
<i>Myrsine salicina</i>	toro	✓	✓	
* <i>Nasturtium officinale</i>	watercress		✓	
<i>Neomyrtus pedunculata</i>	rohutu	✓	✓	✓
* <i>Nepeta cataria</i>	catmint		✓	
<i>Nertera depressa</i>	common nertera		✓	✓
<i>Nestegis cunninghamii</i>	black maire		✓	
<i>Nestegis lanceolata</i>	white maire	✓	✓	
<i>Nestegis montana</i>	narrow-leaved maire		✓	✓
<i>Nothofagus solandri</i> var. <i>solandri</i>	black beech			✓
<i>Nothofagus truncata</i>	hard beech			✓
<i>Olearia rani</i> var. <i>colorata</i>	heketara		✓	✓
<i>Oxalis exilis</i>	creeping oxalis		✓	✓
<i>Oxalis magellanica</i>	white oxalis		✓	
* <i>Parentucellia viscosa</i>	tarweed		✓	✓
<i>Parsonsia capsularis</i> var. <i>capsularis</i>	akakiore		✓	
<i>Parsonsia heterophylla</i>	akakaikiore	✓	✓	
<i>Pennantia corymbosa</i>	kaikomako	✓	✓	
<i>Persicaria decipiens</i>	willow weed	✓		
* <i>Persicaria hydropiper</i>	water pepper		✓	
* <i>Persicaria maculosa</i>	willow weed	✓		
* <i>Phytolacca octandra</i>	inkwed			✓
<i>Pittosporum cornifolium</i>				✓
<i>Pittosporum eugenioides</i>	tarata	✓	✓	
<i>Pittosporum tenuifolium</i>	matipo; kohuhu	✓	✓	✓
* <i>Plantago australis</i>	swamp plantain	✓		✓
* <i>Plantago lanceolata</i>	narrow-leaved plantain	✓	✓	✓
* <i>Plantago major</i>	broad-leaved plantain		✓	✓
* <i>Polycarpon tetraphyllum</i>	allseed		✓	
* <i>Potentilla indica</i>	Indian strawberry	✓		✓
* <i>Potentilla vesca</i>	alpine strawberry	✓		
* <i>Prunella vulgaris</i>	selfheal	✓	✓	✓
* <i>Prunus laurocerasus</i>	cherry laurel	✓		
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed			✓
<i>Pseudopanax arboreus</i>	five finger	✓	✓	
<i>Pseudopanax crassifolius</i>	lancewood; horoeka	✓	✓	✓
<i>Pseudowintera axillaris</i>	horopito	✓	✓	✓
<i>Pseudowintera colorata</i>	mountain horopito	✓	✓	
<i>Quintinia serrata</i>	tawheowheo		✓	✓
<i>Ranunculus amphitrichus</i>	buttercup	✓		
<i>Ranunculus reflexus</i>	hairy buttercup	✓	✓	✓
* <i>Ranunculus repens</i>	creeping buttercup	✓	✓	✓
<i>Raukawa anomalus</i>	whauwhaupaku	✓	✓	✓

<i>Raukawa edgerleyi</i>	rauakawa		√	
* <i>Ribes sanguineum</i>	flowering currant	√		
<i>Rubus australis</i>	swamp lawyer	√		
<i>Rubus cissoides</i>	bush lawyer	√	√	√
* <i>Rubus fruticosus</i> agg.	blackberry	√	√	√
* <i>Rubus phoenicolasius</i>	Japanese wineberry	√		
<i>Rubus schmidelioides</i> var. <i>schmidelioides</i>	bush lawyer	√	√	
* <i>Rumex acetosella</i>	sheep's sorrel			√
* <i>Rumex conglomeratus</i>	clustered dock	√		
* <i>Rumex crispus</i>	curled dock			√
* <i>Rumex obtusifolius</i>	broad-leaved dock	√	√	√
* <i>Sagina procumbens</i>	mossy pearlwort			√
* <i>Salix</i> × <i>reichardtii</i>	pussy willow	√		√
* <i>Salix cinerea</i>	grey willow	√		
* <i>Salix fragilis</i>	crack willow	√	√	
<i>Schefflera digitata</i>	pate	√	√	√
* <i>Scrophularia aurantiaca</i>	water figwort	√		√
* <i>Senecio bipinnatisectus</i>	Australian fireweed		√	√
<i>Senecio minimus</i>	fireweed	√	√	√
* <i>Sison amomum</i>	stone parsley			√
* <i>Solanum nigrum</i>	black nightshade	√	√	
<i>Solanum nodiflorum</i>	small-flowered nightshade	√	√	√
* <i>Soliva sessilis</i>	Onehunga weed			√
* <i>Sonchus asper</i>	prickly sow thistle	√		
* <i>Sonchus oleraceus</i>	sow thistle	√		
* <i>Stachys sylvatica</i>	hedge woundwort	√	√	
* <i>Stellaria alsine</i>	bog stichwort		√	√
* <i>Stellaria media</i> subsp. <i>media</i>	chickweed	√	√	√
<i>Stellaria parviflora</i>	native chickweed	√	√	√
<i>Streblus heterophyllus</i>	turepo	√		
* <i>Teucrium scorodonia</i>	wood sage		√	√
* <i>Trifolium dubium</i>	suckling clover		√	
* <i>Trifolium pratense</i>	red clover			√
* <i>Trifolium repens</i>	white clover	√	√	
* <i>Ulex europaeus</i>	gorse			√
<i>Urtica incisa</i>	stinging nettle	√	√	
* <i>Urtica urens</i>	nettle	√		
* <i>Verbascum thapsus</i>	woolly mullein			√
* <i>Verbena bonariensis</i>	purple-top			√
* <i>Verbena officinalis</i>	vervain		√	√
* <i>Veronica anagallis-aquatica</i>	water speedwell			√
* <i>Veronica serpyllifolia</i>	field speedwell			√
<i>Wahlenbergia violacea</i>	New Zealand harebell			√
<i>Weinmannia racemosa</i>	kamahai	√	√	√

Monocotyledons

* <i>Agrostis capillaris</i>	browntop	✓	✓	
* <i>Alopecurus geniculatus</i>	kneed foxtail	✓	✓	✓
* <i>Anthoxanthum odoratum</i>	sweet vernal	✓	✓	✓
* <i>Arrhenatherum elatius</i>	tall oat grass	✓		
<i>Astelia fragrans</i>	bush flax		✓	
<i>Astelia solandri</i>	kowharawhara	✓	✓	✓
* <i>Axonopus fissifolius</i>	narrow-leaved carpet grass			✓
<i>Carex dipsacea</i>		✓		
<i>Carex dissita</i>	flat leaved sedge	✓	✓	✓
* <i>Carex divulsa</i>			✓	
<i>Carex forsteri</i>	sedge	✓	✓	
<i>Carex geminata</i> agg.	rautahi	✓	✓	✓
<i>Carex maorica</i>	cyperus sedge	✓	✓	
* <i>Carex ovalis</i>	oval sedge		✓	
<i>Carex secta</i>	swamp sedge	✓	✓	
<i>Carex solandri</i>	Solanders sedge	✓	✓	✓
<i>Carex virgata</i>	swamp sedge	✓	✓	
<i>Collospermum microspermum</i>		✓	✓	
<i>Cordyline australis</i>	cabbage tree	✓		
<i>Cordyline banksii</i>	forest cabbage tree	✓	✓	✓
<i>Cordyline indivisa</i>	broad-leaved cabbage tree		✓	
<i>Cortaderia fulvida</i>	toetoe	✓	✓	✓
* <i>Cortaderia seloana</i>	pampas	✓		✓
* <i>Crocasmia × crocosmiiflora</i>	montbretia	✓		
* <i>Cynodon dactylon</i>	Indian doab	✓		
* <i>Cynosurus cristatus</i>	crested dogstail			✓
* <i>Dactylis glomerata</i>	cocksfoot	✓	✓	
<i>Dianella nigra</i>	blueberry		✓	✓
<i>Dichelachne crinita</i>	long-hair plume grass		✓	
* <i>Digitaria sanguinalis</i>	summer grass			✓
<i>Earina autumnalis</i>	Easter orchid	✓	✓	✓
<i>Earina mucronata</i>	peka-a-waka	✓	✓	✓
<i>Eleocharis acuta</i>	spike-sedge	✓	✓	
<i>Eleocharis gracilis</i>	slender spike-sedge		✓	
<i>Eragrostis brownii</i>	bay grass			✓
<i>Freycinetia banksii</i>	kiekie		✓	✓
<i>Gahnia pauciflora</i>	gahnia		✓	✓
<i>Gahnia setifolia</i>	gahnia			✓
* <i>Glyceria declinata</i>	glaucous sweet grass	✓	✓	
<i>Glyceria fluitans</i>	floating sweet grass	✓		
<i>Hierochloe redolens</i>	karetu	✓		
* <i>Holcus lanatus</i>	Yorkshire fog	✓	✓	✓
<i>Isachne globosa</i>	swamp millet	✓		

<i>Isolepis pottsii</i>	clubrush		√	√
<i>Isolepis reticularis</i>	clubrush		√	
* <i>Juncus articulatus</i>	jointed rush	√	√	√
<i>Juncus edgariae</i>	wiwi	√	√	√
* <i>Juncus effusus</i> var. <i>effusus</i>	soft rush	√	√	√
* <i>Juncus tenuis</i> var. <i>tennis</i>	track rush		√	√
<i>Libertia grandiflora</i>	turutu		√	
<i>Libertia micrantha</i>	star herb		√	
<i>Luzula picta</i> var. <i>picta</i>	woodrush		√	
<i>Microlaena avenacea</i>	bush rice grass	√	√	
<i>Microlaena stipoides</i>	forest rice grass		√	√
<i>Microtis unifolia</i>	onion orchid		√	√
* <i>Miscanthus nepalensis</i>	Himalayan fairy grass			√
<i>Morelotia affinis</i>				√
<i>Orthoceras novae-zeelandiae</i>	mamaika			√
* <i>Paspalum dilatatum</i>	paspalum			√
* <i>Pennisetum clandestinum</i>	kikuyu grass	√		
* <i>Phleum pratense</i>	timothy	√		
<i>Phormium cookianum</i> (planted)		√		
<i>Phormium tenax</i>	harakeke	√		
<i>Poa anceps</i> subsp. <i>anceps</i>	coastal poa		√	
* <i>Poa annua</i>	annual poa	√		√
<i>Potamogeton cheesemanii</i>	pondweed	√		
<i>Ripogonum scandens</i>	supplejack	√	√	√
<i>Rytidosperma gracile</i>	forest fairy grass		√	√
* <i>Rytidosperma racemosum</i>	danthonia			√
<i>Rytidosperma viride</i>	danthonia		√	
* <i>Schedonorus arundinaceus</i>	tall fescue	√		
<i>Thelymitra</i> sp.	sun orchid			√
<i>Typha orientalis</i>	raupo	√	√	
<i>Uncinia banksii</i>	hooked sedge		√	
<i>Uncinia ferruginea</i>	hooked sedge	√	√	√
<i>Uncinia scabra</i>	hooked sedge		√	
<i>Uncinia uncinata</i>	watu	√	√	
<i>Uncinia zotovii</i>	hooked sedge		√	
<i>Winika cunninghamii</i>	bamboo orchid	√	√	√

REFERENCES

Thorsen, M. 2003: Higher Plant Species List No. 38, Motu Scenic Reserve, Motu. Unpublished list, Department of Conservation, Gisborne.