

A NOTE ON THE LAKE OKAREKA MARGINAL STRIP

John F. F. Hobbs

The Okareka Marginal Strip (OMS) Grid Ref NZMS 260 U16 035 310 for the purposes of this note is an approximately 1.1 ha. area of land comprising a small (0.11 ha.) parcel of Rotorua District Council (RDC) Recreation Reserve and the balance part of a Department of Conservation (DoC) administered 20m wide Marginal Strip around the shore of Lake Okareka. The Area is bounded to the north by private property, to the west by Calder and Okareka Loop Roads, to the south by RDC Road Reserve and to the east by Lake Okareka. The “strip” is approximately 300 metres long by 100 metres at its widest part (to the south) and some 30 metres wide at its narrowest. (In reality the official Marginal Strip is a DoC administered 20m wide strip of land surrounding much of the lake except for RDC Road Reserves.)

There are two low ridges on the OMS running more or less east/west between the road and the lake. Between these ridges there is a wide shallow gully. To the north of the north ridge a small temporary stream drains stormwater from Calder Road to the lake. Similarly to the south of the south ridge there is a semi-permanent stream draining the ridge on the north-eastern portion of the Lake Tikitapu Scenic Reserve to the south-east. There are several tracks along the north ridge from the road to boat sheds on the lake shore. Through the middle of the strip there is a track from the road to a small council jetty.

The northern flank of the north ridge is dominated by grey willow (*Salix cinerea*) merging into mangero (*Litsea calicaris*), mamaku (*Cyathea medullaris*) over kohuhu (*Pittosporum tenuifolium* var. *tenuifolium*), five-finger (*Pseudopanax arboreus*), mahoe (*Melicytus ramiflorus*) on the ridge with a few large rewarewa (*Knightsia excelsa*). The dominant ground cover is dense kiokio (*Blechnum novae-zelandiae*). There is also considerable tawa (*Beilschmiedia tawa*)

some up to 2.5 metres tall, and mangeao regeneration, although there are no mature tawa trees present.

To the north-east there is a small wetland under grey willow over *Carex* and *Juncus* spp., kiokio and water parslane (*Ludwigia palustris*) with several seedlings of tanekaha (*Phyllocladus trichomanoides*) and kahikatea (*Dacrycarpus dacrydioides*). Also in the drier parts this area are a considerable number of bay laurel (*Laurus nobilis*) seedlings and also a patch of *Rosa multiflora* rooted from garden discards.

The broad gully between the ridges is dominated by pink bindweed (*Calystegia sepium*), bracken (*Pteridium esculentum*), cleavers (*Gallium aparine*) and Japanese honeysuckle (*Lonicera japonica*). Along the footpath on the west side is a mown strip of grass widening to the south ridge. The off-road side of this strip has a considerable population of wild brassicas - wild turnip (*Brassica rapa* subsp. *sylvestris*), sea radish (*Raphanus raphanistrum* subsp. *maritimus*) and garden discards. Along the lake edge is a narrow band of grey willow, five-finger with a small patch of hydrangea (*Hydrangea macrophylla*).

On the north slopes of the south ridge are some mature five-finger merging into kamahi (*Weinmannia racemosa* var. *racemosa*), mangeao open forest, to the south of this ridge there is a large area of kiokio with occasional emergent mature five-finger and kohuhu. Along the lake edge mamaku and grey willow dominate. In approximately the middle of this area there is a patch of about two metres diameter where the only filmy ferns on the OMS grow and close by a single specimen of the orchid – peka-a-waka (*Earina mucronata*) is to be found growing epiphytically on a kamahi. Along the road side in this area is some blackberry (*Rubus fruticosus* agg.).

The lake margin is dominated by raupo (*Typha orientalis*) along the lake edge, with a patch of water lily (*Nymphaea alba*) north of the jetty. Also present are the jointed twig-rush (*Baumea articulata*) and slender spike-sedge (*Eleocharis gracilis*), with ferny azolla (*Azolla*

pinnata), pondweed (*Potamogeton ochreatus*) and oxygen weed (*Lagarosiphon major*) in the water.

DoC has over recent years undertaken a regime of weed control targeting principally jasmine (*Jasminum polyanthum*) and Japanese honeysuckle (*Lonicera japonica*). Other weed species present include aluminium plant (*Galeobdolon luteum*), cotoneaster (*Cotoneaster glaucophyllus*), Japanese hill cherry (*Prunus serrulata*), Japanese walnut (*Juglans ailantifolia*), montbretia (*Crocsmia x crocosmiiflora*), strawberry dogwood (*Dendrobenthamia capitata*), selaginella (*Selaginella kraussiana*) and wandering Jew (*Tradescantia fluminensis*). During BotSoc / DoC work days in 2003 weed species such as cotoneaster, Japanese hill cherry, Japanese walnut (*Juglans ailantifolia*), and strawberry dogwood have suffered from a severe attack of “Sheffield blight”. All stumps were treated with Vigilant* to stop sprouting although the cherries perhaps should have been given a heavier pasting. Jasmine has also been targeted either by spraying with 2% glyphosate where native species would not be affected or hand pulled and hung in branches to dry.

Across Calder Road from the Recreation Reserve there is a considerable weed (or potential) seed source including cape ivy, Cretan brake (*Pteris cretica*), agapanthus (*Agapanthus orientalis*), cotoneaster, wandering Jew, montbretia, Himalayan honeysuckle (*Leycesteria formosa*), selaginella, oxalis, Mexican daisy (*Erigeron karvinskianus*), and wild ginger (*Hedychium gardnerianum*),

The OMS is of botanical interest because of the presence of two green mistletoes *Ileostylus micranthus* and *Tupeia antarctica*. A large number of *Tupeia* plants were present prior to 1999 but had been reduced considerably by early 2001 Hobbs (2002), mainly due to the death of many of the principal host five-finger (*Pseudopanax arboreus*). The other host is one mature tree lucerne (*Chamaecytisus palmensis*) bearing some thirty plants. There is a large population of *Tupeia* approximately three hundred metres to the south-west in the Lake Tikitapu Scenic Reserve. There was a very small population of *Ileostylus* (4 plants) present in 2000, two were hosted on kohuhu (*Pittosporum tenuifolium* var.

tenuifolium) and one of these plants has since died and two on a grey willow which has since been felled. In the greater area, approximately five hundred metres to the east and south-east respectively, there are two *Ileostylus* plants on silver birch (*Betula pendula*) and several on London plane trees (*Platanus x acerifolia*).

Currently the Rotorua Botanical Society with the help of and under the auspices of DoC is undertaking a project to enhance the future of the mistletoe population by a voluntary weed eradication program, the planting of *Tupeia* host trees (five-finger and tree lucerne) and the encouragement of local pride in not dumping garden refuse and other rubbish on the marginal strip. DoC has erected signs to this end.

* Vigilant is the registered trademark of The Horticultural & Food Research Institute of New Zealand

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REFERENCE

Hobbs, J.F.F. 2002 : A resurvey of the mistletoes *Ileostylus micranthus* and *Tupeia antarctica* in the Bay of Plenty. *Rotorua Botanical Society Newsletter* 38 : pp12-31.

CHECK LIST OF VASCULAR PLANT SPECIES IN THE OKAREKA MARGINAL STRIP

John Hobbs December 2003, January, February 2004

Note : * = adventive species; species marked # are species targeted for eradication by DoC and the Botanical Society.

Fern Allies

* *Selaginella kraussiana* # selaginella

Ferns

* <i>Azolla pinnata</i>	ferny Azolla
<i>Asplenium flaccidum</i> var. <i>flaccidum</i>	hanging spleenwort
<i>Blechnum novae-zelandiae</i>	kiokio
<i>Cyathea dealbata</i>	silver fern
<i>Cyathea medullaris</i>	mamaku
<i>Cyathea smithii</i>	soft tree fern
<i>Dicksonia squarrosa</i>	wheki
<i>Diplazium australe</i>	southern lady fern
<i>Histiopteris incisa</i>	water fern
<i>Hymenophyllum dilatatum</i>	filmy fern
<i>Hymenophyllum rarum</i>	filmy fern
<i>Hymenophyllum sanguinolentum</i>	piripiri
<i>Hymenophyllum scabrum</i>	filmy fern
<i>Hypolepis ambigua</i>	pig fern
<i>Microsorium pustulatum</i>	hound's tongue
<i>Paesia scaberula</i>	lace fern
<i>Pellaea rotundifolia</i>	tarawera
<i>Pneumatopteris pennigera</i>	gully fern
<i>Pteridium esculentum</i>	bracken
<i>Pteris macilenta</i>	shaking brake
<i>Pyrrosia eleagnifolia</i>	leather-leaf fern

Gymnosperms

<i>Dacrydium dacrydioides</i>	kahikatea
<i>Phyllocladus trichomanoides</i>	tanekaha

Dicotyledonous Trees & Shrubs

* <i>Acacia dealbata</i>	silver wattle
<i>Alectryon excelsus</i> var. <i>excelsus</i>	titoki
<i>Aristotelia serrata</i>	wineberry
<i>Beilschmiedia tawa</i>	tawa
* <i>Betula pendula</i>	silver birch

<i>Brachyglottis repanda</i> var. <i>repanda</i>	rangiora
* <i>Buddleja davidii</i>	buddleia
* <i>Camellia japonica</i> (hybrid?)	camellia
<i>Carpodetus serratus</i>	putaputaweta
* <i>Chamaecytisus palmensis</i>	tree lucerne
<i>Coprosma grandifolia</i>	kanono
<i>Coprosma robusta</i>	karamu
<i>Coriaria arborea</i> var. <i>arborea</i>	tutu
* <i>Cotoneaster glaucophyllus</i> #	cotoneaster
* <i>Dendrobenthamia capitata</i> #	strawberry dogwood
<i>Fuchsia excorticata</i>	kotukutuku
* <i>Fuchsia magellanica</i>	Magellan fuchsia
<i>Gaultheria antipoda</i>	snowberry
<i>Geniostoma rupestre</i> var. <i>ligustrifolium</i>	hangehange
<i>Hebe stricta</i> var. <i>stricta</i>	koromiko
<i>Hedycarya arborea</i>	pigeonwood
* <i>Hydrangea macrophylla</i>	hydrangea
<i>Ileostylus micranthus</i>	mistletoe
* <i>Jasminum polyanthum</i>	jasmine
* <i>Juglans ailantifolia</i>	Japanese walnut
<i>Knightia excelsa</i>	rewarewa
* <i>Laurus nobilis</i>	bay laurel
<i>Leucopogon fasciculatus</i>	mingimingi
* <i>Ligustrum sinense</i>	privet
<i>Litsea calicaris</i>	mangeao
<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	mahoe
<i>Myrsine australis</i>	mapou
<i>Pittosporum tenuifolium</i> ssp. <i>tenuifolium</i>	kohuhu
* <i>Populus nigra</i>	Lombardy poplar
* <i>Prunus persica</i>	peach
* <i>Prunus serrulata</i> #	Japanese hill cherry
<i>Pseudopanax arboreus</i>	five-finger
<i>Pseudopanax crassifolius</i>	lancewood
* <i>Rosa multiflora</i>	
* <i>Salix cinerea</i>	grey willow
* <i>Salix fragilis</i>	crack willow
<i>Schefflera digitata</i>	pate
* <i>Teline monspessulana</i>	Montpellier broom
<i>Tupeia antarctica</i>	pirita
<i>Weinmannia racemosa</i> var. <i>racemosa</i>	kamahi

Dicotyledonous Lianes

<i>Clematis cunninghamii</i>	clematis
<i>Clematis paniculata</i>	clematis

* <i>Hedera helix</i>	ivy
* <i>Lonicera japonica</i> #	Japanese honeysuckle
<i>Metrosideros perforata</i>	rata vine
<i>Muehlenbeckia australis</i>	pohuehue
<i>Muehlenbeckia</i> sp. (large leaf)	pohuehue
<i>Parsonsia capsularis</i>	N. Z. jasmine
* <i>Rubus fruticosus</i> agg.	blackberry
* <i>Rubus phoenicolasius</i>	Japanese wineberry
<i>Rubus cissoides</i>	bush lawyer
* <i>Senecio mikanioides</i>	German ivy

Dicotyledonous Herbs

* <i>Achillea millefolium</i>	yarrow
* <i>Anagallis arvensis</i>	scarlet pimpernel
* <i>Aquilegia vulgaris</i>	aquilegia
* <i>Bellis perennis</i>	daisy
* <i>Bidens frondosa</i>	beggar's ticks
* <i>Brassica rapa</i> var. <i>sylvestris</i>	wild turnip
* <i>Callitriche stagnalis</i>	starwort
<i>Cabystegia sepium</i>	pink bindweed
* <i>Centaureum erythraea</i>	centaury
* <i>Cirsium arvense</i>	Californian thistle
* <i>Cirsium vulgare</i>	Scotch thistle
* <i>Conyza albida</i>	broad-leaved fleabane
* <i>Coronopus didymus</i>	twin cress
* <i>Crepis capillaris</i>	hawksbeard
* <i>Digitalis purpurea</i>	foxglove
<i>Epilobium pallidiflorum</i>	willow herb
* <i>Erodium cicutarium</i>	storksbill
* <i>Euphorbia pepus</i>	milkweed
* <i>Fumaria muralis</i>	scrambling muralis
* <i>Galeobdolon luteum</i> #	aluminium plant
* <i>Galinsoga parviflora</i>	galinsoga
* <i>Galium aparine</i>	cleavers
* <i>Galium palustre</i>	marsh bedstraw
* <i>Geranium molle</i>	dove's foot cranesbill
* <i>Geranium dissectum</i>	cut-leaved cranesbill
* <i>Gnaphalium coarctatum</i>	purple cudweed
<i>Haloragis erecta</i>	shrubby haloragis
<i>Hydrocotyle novae-zelandiae</i>	hydrocotyle
* <i>Hypochoeris radicata</i>	catsear
* <i>Leontodon taraxacoides</i>	hawkbit
* <i>Linaria purpurea</i>	purple linaria
* <i>Lotus pedunculatus</i>	lotus

* <i>Ludwigia palustris</i>	water parslane
* <i>Mentha</i> x <i>piperita</i> var. <i>citrate</i>	peppermint
* <i>Mentha spicata</i> ssp. <i>spicata</i>	spearmint
* <i>Mycelis muralis</i>	wall lettuce
* <i>Myosotis arvensis</i>	forget-me-not
<i>Myriophyllum triphyllum</i>	water milfoil
* <i>Nymphaea alba</i>	water lily
* <i>Orobanche minor</i>	broomrape
<i>Oxalis exilis</i>	creeping oxalis
* <i>Oxalis incarnata</i>	lilac oxalis
* <i>Plantago lanceolata</i>	narrow-leaved plantain
* <i>Plantago major</i>	broad-leaved plantain
<i>Polygonum salicifolium</i>	swamp willow weed
<i>Pratia angulata</i>	pratia
* <i>Prunella vulgaris</i>	selfheal
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed
* <i>Ranunculus repens</i>	creeping buttercup
<i>Ranunculus reflexus</i>	buttercup
* <i>Raphanus raphanistrum</i> ssp. <i>raphanistrum</i>	wild radish
* <i>Rumex acetosella</i>	sheep's sorrel
* <i>Rumex obtusifolius</i>	broad-leaved dock
* <i>Senecio jacobaea</i>	ragwort
* <i>Silene gallica</i>	catchfly
* <i>Solanum nigrum</i>	black nightshade
* <i>Solanum tuberosum</i>	potato
* <i>Sonchus asper</i>	prickly sow thistle
* <i>Sonchus oleraceus</i>	sow thistle
* <i>Stellaria media</i>	chickweed
* <i>Taraxacum officinale</i>	dandelion
* <i>Trifolium pratense</i>	red clover
* <i>Trifolium repens</i>	white clover
* <i>Vicia hirsute</i>	hairy vetch
* <i>Veronica persica</i>	scrambling speedwell

Monocotyledonous Trees Shrubs & Lianes

Ripogonum scandens supplejack

Orchid

Earina mucronata peka-a-waka

Grasses

**Agrostis stolonifera* creeping bent
 **Anthoxanthum odoratum* sweet vernal
 **Bromus willdenowii* prairie grass

<i>Cortaderia fulvida</i>	toetoe
* <i>Dactylis glomerata</i>	cocksfoot
<i>Poa anceps</i> subsp. <i>anceps</i>	broad-leaved poa
* <i>Schedonorus phoenix</i>	tall fescue
* <i>Holcus lanata</i>	Yorkshire fog
* <i>Lolium perenne</i>	perennial ryegrass
* <i>Paspalum dilatatum</i>	paspalum

Sedges

<i>Baumea articulata</i>	jointed twig-rush
<i>Carex dipsacea</i>	
<i>Carex geminata</i>	rautahi
<i>Carex maorica</i>	cyperus sedge
<i>Carex secta</i>	niggerhead
<i>Carex virgata</i>	swamp sedge
<i>Eleocharis gracilis</i>	slender spike-sedge
<i>Uncinia uncinata</i>	kamu
<i>Isolepis distigmata</i>	

Rushes

* <i>Juncus acuminatus</i>	sharp-fruited rush
<i>Juncus pallidus</i>	giant rush
* <i>Juncus articulatus</i>	jointed rush
<i>Juncus gregiflorus</i>	leafless rush
<i>Juncus (septati) bulbosus?</i> / <i>articulatus?</i>	rush

Other Monocotyledonous Herbs

* <i>Crocasmia x crocosmiiflora</i>	montbretia
<i>Dianella nigra</i>	blueberry
* <i>Lagarosiphon major</i>	oxygen weed
<i>Phormium tenax</i>	harakeke
<i>Potamogeton ochreateus</i>	pondweed
* <i>Sisyrinchium</i> "blue"	blue-eye grass
* <i>Spirodela punctata</i>	purple-backed duckweed
* <i>Tradescantia fluminensis</i> #	wandering Jew
<i>Typha orientalis</i>	raupo