CARMICHAEL RESERVE FIELD TRIP 13 JUNE 2010

G Jane & G Donaghy

The Carmichael Reserve is part of a series of reserves stretching from Orchard Road to the Tauranga Harbour down a small stream and connected to Matua saltmarsh by York Park where we regularly walk. Since we arrived in Tauranga 10 years ago, we have seen grazed paddocks converted to houses and ponds, and the walk cut by SH 2 'improvements', Beaumaris Road and a short section of anew subdivision.

Above SH2, the Stirlingate area was partially revegetated but one head gully was choked with grey willow (*Salix cinerea*) when we arrived. It has since been converted to forest. Below SH2, cattle were removed only in the last 12 months and the paddocks continue to be progressively revegetated with new plantings even in the last few days before the field trip.

Ponds have been put in to trap sediment from the subdivisions, but often too late, resulting in a very yellow silt-laden stream carrying sediment into the harbour. This provides a good habitat for mangroves which have proliferated around the stream mouth, much to the dismay of those over looking it, as it devalues the property by spoiling the view! A local care group has been formed to remove them. More recently, a new stream channel has been put in to replace a straight drain. Work continued right up to our visit with new paths put in the week before the field trip and a digging out of the older ponds (spoiling some of the vegetation we sought to visit). Also very pertinent, was the imminent introduction of grass carp to control *Myriophyllum aquaticum, Potamogeton crispus* and *Egeria densa* which choked the more recent ponds.

The objective of the visit was to follow the transition from freshwater wetlands to coastal marsh and view the development of the new 'forest' as well as some of the remnants of the original vegetation. As the day turned out to be showery, we started at an old pond (which had been cleaned out in the last few days) at Orange Grove Lane in

the upper part of the Stirlingate area. Here a small remnant wetland contained *Carex geminata*, *Baumea rubiginosa, Isachne globosa, Eleocharis acuta, E. gracilis, C. maorica, C. fascicularis* and *Lepidosperma australe*. All the truly aquatic plants had been recently dug out, but the most serious weeds, *Myriophyllum aquaticum* and *Egeria densa* were formerly almost absent here. The pond was fringed by *Glyceria maxima* and surrounded by a well developed forest of cabbage trees, flax, manuka and a wide range of other species planted about eight years ago.

From there we headed down valley, stopping first to view a cabbage tree/ flax wetland with residual mamaku, many dead, that was *grey willow* just eight years ago. A few willow, Taiwan cherry, pampas, and flannel leaf remain though. Further down, the slopes above the path had mostly been planted by the landowners in native species but below the track cabbage trees and flax now dominated a varied planting of native species, that had included kauri, titoki, karaka, karo and kohuhu.

After crossing the nearly complete Beamaris Rd intrusion, we reached the oldest planted area adjacent to the next pond. It was backed by a remnant slope forest dominated by mamaku and mahoe but with a good range of understorey plants including kawakawa, whau, silver fern rangiora and seedlings from plantings of puriri, kohekohe, and manuka. Here plantings of rimu, totara, puriri and kahikatea were doing well. The lower pond had not been 'cleaned' so the wetland near SH2 provided more wetland plants of interest including *Bolboschoenus fluitans*, raupo, *Carex secta*, and *Schoenoplectus tabernaemontani*. A lone healthy swamp maire attracted much interest as they rarely do well when planted.

The pond itself was largely weed free and fringed by well established kahikatea, contrasting with the recent pond below the road in the Carmichael area which was totally choked with *Myriophyllum aquaticum*. Interestingly its neighbour, a deeper pond, was largely weed free. A shower shortened this session so we regained our vehicles and headed for the recently completed outdoor classroom on Carmichael Road where the rain cleared for lunch. The classroom is beside the oldest pond in the Carmichael area

and looks out across planted ngaio to an ugly hill slope that had been cleared of a mixed forest of mahoe, mamaku, pines and brush wattle but not replanted.
After lunch, we ventured to view current digging activities that had removed a nice stand of tall spike rush (*Eleocharis sphacelata*); fortunately some remnants survived. Other plants included *Persicaria decipiens* and crushed swards of *Glyceria maxima.*

A path opened in the last week led from there to the foot of the hill where a small remnant of forest remained. A good selection of ferns was present including *Blechnum chambersii, and Asplenium bulbiferum* under mamaku but also weeds such as ginger and asparagus fern. The trek along the side of the hill (in a shower) passed the oldest valley flat plantings in the Carmichael area with kahikatea now emerging from a kanuka and cabbage tree canopy. Our journey took us to mouth of the lowermost (and most recent) pond and on the most recent track on a side valley. Here at the saltwater interface plants included *Glossostigma elatinoides*, bachelor's button, arrow grass, and tape measure plant (*Lilaeopsis novaezelandiae*). At this point a heavy shower intervened and several people departed, but it soon cleared and the adventurous continued. At the saltwater outlet to the main valley, on an old weir, saltmarsh *Olearia solandri*, *Baumea juncea, Juncus kraussii* and *Apodasmia similis*, were common. The last two extended for some distance around patches of mangroves. A small patch of *B. articulata*, looking similar to the tall spike rush with similar soft tubular stems was distinguished by its large fruiting panicle.

The return to the cars continued across the weir of the lowermost pond, which is deep, tidal and largely weed-free and round to its inlet where horse's mane (*Ruppia polycarpa*) was noted in the brackish water. Above this point the artificial stream channel became choked with *Egeria densa* and *Myriophyllum aquaticum*, all the way up to SH 2 as the salt influence decreased. Here salt turfs had been obscured by mud deposits from recent flooding. At the last bridge a small patch of raupo was all that could be seen through a sea of weeds. A last shower ensured we retired to tea and fresh scones, and more discussion in a comfortable setting to finish the afternoon.

SOME WETLAND PLANTS OF THE CARMICHAEL RESERVE

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Dicot herbs

*	*Apium nodiflorum*	water celery
	Apium "slender"	
*	*Aster subulatus*	sea aster
*	*Atriplex prostrata*	hastate orache
*	*Callitriche stagnalis*	starwort
*	*Centella uniflora*	
	Cotula australis	soldier's button
	Cotula coronopifolia	bachelor's button
	Elatine gratioloides	
*	*Epilobium ciliatum*	tall willow-herb
	Glossostigma elatinoides	
	Haloragis erecta subsp. *erecta*	toatoa
	Lilaeopsis novae-zelandiae	tape measure plant
	Limosella lineata	
*	*Ludwigia palustris*	water purslane
*	*Myosotis laxa* subsp. *caespitosa*	water forget-me-not
*	*Myosotis scorpioides*	water forget-me-not
*	*Myriophyllum aquaticum*	parrot's feather
	Myriophyllum pedunculatum subsp. *novae-zelandiae*	
	Persicaria decipiens	
*	*Persicaria hydropiper*	
*	*Persicaria maculosa*	
*	*Ranunculus flammula*	spearwort
	Ranunculus macropus	
*	*Ranunculus parviflorus*	small-flowered buttercup
*	*Ranunculus repens*	creeping buttercup
*	*Ranunculus sardous*	hairy buttercup
*	*Ranunculus sceleratus*	celery-leaved buttercup
*	*Rumex crispus*	curled dock
	Samolus repens var. *repens*	maakoako
	Senecio esleri	
	Senecio glomeratus	fireweed
	Senecio hispidulus	fireweed

Sedges

Baumea articulata
Baumea juncea
Baumea rubiginosa
Baumea teretifolia

*	*Carex demissa*	
*	*Carex divulsa*	
	Carex lessoniana	
	Carex maorica	
*	*Carex ovalis*	
	Carex secta	niggerhead; pukio
	Carex virgata	
*	*Carex vulpinoidea*	
*	*Cyperus eragrostis*	
	Cyperus ustulatus f. *ustulatus*	coastal cutty grass
	Eleocharis pusilla	
	Eleocharis sphacelata	tall spike rush
	Isolepis cernua var. cernua	
	Isolepis prolifera	
*	*Isolepis setacea*	
	Isolepis subtilissima	
*	*Isolepis tenella*	
	Schoenoplectus pungens	three-square
	Schoenoplectus tabernaemontani	kuwawa

Rushes and allied plants

	Apodasmia similis	
*	*Juncus articulatus*	jointed rush
	Juncus australis	
*	*Juncus bufonius* var. *bufonius*	toad rush
*	*Juncus bulbosus*	bulbous rush
	Juncus edgariae	wiwi
*	*Juncus effusus var. effusus*	soft rush
	Juncus kraussii subsp. *australiensis*	sea rush
*	*Juncus microcephalus*	
	Juncus pallidus	wi
*	*Juncus tenuis* var. *tenuis*	track rush

Grasses

*	*Agrostis stolonifera*	creeping bent
*	*Anthoxanthum odoratum*	sweet vernal
	Cortaderia fulvida	kakaho; toetoe
*	*Cortaderia selloana*	pampas
	Cortaderia toetoe	toetoe
*	*Cynodon dactylon*	Indian doab
*	*Dactylis glomerata*	cocksfoot
*	*Glyceria declinata*	glaucous sweet grass
*	*Glyceria maxima*	reed sweet grass

*	*Holcus lanatus*	Yorkshire fog
	Isachne globosa	swamp millet
*	*Paspalum dilatatum*	paspalum
*	*Pennisetum clandestinum*	kikuyu
*	*Poa annua*	annual poa
*	*Schedonorus arundinaceus*	tall fescue

Monocot herbs

*	*Egeria densa*	
*	*Elodea canadensis*	Canadian pond weed
*	*Lagarosiphon major*	
	Lemna minor	duckweed
	Phormium tenax	flax
	Potamogeton cheesemanii	red pondweed
*	*Potamogeton crispus*	curled pondweed
	Ruppia megacarpa	horse's mane
	Triglochin striata	
	Typha orientalis	raupo
	Zannichellia palustris	