

Field trip report, Waionui Inlet, Kaipara South Head, 17 August 2013

David Wilson

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On this trip we looked at two areas on the eastern side of the Waionui Inlet, Kaipara South Head. The first part of the day took us through kanuka (*Kunzea ericoides*) forest to the edge of the Woodhill commercial pine plantation. This walk began at the parking area at the northern end of Lagoon Rd, beside Waionui Inlet. It followed an informal loop track below a canopy of c.10 m high kanuka in the Waionui Covenant area, to an elevated (80 m asl) area at the edge of the pine forest, before descending, again through kanuka, back to the parking area.

Both the covenant and the pine plantation were at that time administered by Hancock Forest Management Ltd under a Crown forestry licence. When this article goes to print, this licence will have been relinquished, with the ownership of Woodhill Forest having been transferred to the iwi Ngati Whatua as part of this iwi's Treaty of Waitangi settlement with the Crown.

For the second part of the trip, we investigated part of the eastern margin of the Waionui Inlet, where kanuka gives way to manuka (*Leptospermum scoparium*) and other wetland vegetation. This area is administered by the Department of Conservation (DoC) as the Waionui Inlet Marginal Strip. A good account of the vegetation of margins of the Waionui Inlet is provided by Cameron and Bellingham (2002).

Our first walk, in the forest of the Waionui Covenant, showed us the effects of browsing by fallow deer (*Dama dama*). These are abundant here - those at the head of our party saw a small herd retreating ahead of us as we began our walk. Shrubs more palatable to deer have been largely eliminated, the remaining understorey being dominated by the apparently less palatable *Leptocophylla juniperina*, *Coprosma rhamnoides*, *C. crassifolia* (Fig. 1), *Leucopogon fasciculatus* and *Corokia cotoneaster*. An encouraging discovery early in the day was a few individuals of *Pelargonium inodorum* (Fig. 2), a species not previously recorded



Fig. 1. Male flowers of *Coprosma crassifolia*. Photo: J. Salter, 17 Aug 2013.



Fig. 2. *Pelargonium inodorum*, Waionui Covenant Area. Photo: D. Wilson, 17 Aug 2013.

around the Waionui Inlet. Other plants of particular interest on the forest floor were the grass *Poa pusilla*, which was common on and beside the track but not in flower, and the daisy *Lagenophora stipitata*, a common species under kanuka at Woodhill Forest, where it forms a nationally significant population. *Cotula australis* was another native species common on the forest floor. The comb fern *Schizaea bifida* is less commonly observed here in winter, but we found a few fronds in some mossy areas. Bryophytes and lichens were a conspicuous feature of the forest floor (Fig. 3). Whilst attractive, their luxuriant growth is induced by deer, which by browsing much of the vascular undergrowth, create extra light and space in which these 'lower' plants can flourish.

At its highest point, the track skirts the edge of a more sparsely vegetated area of firm, consolidated



Fig. 3. Forest interior, Waionui Covenant Area. Photo: J. Salter, 17 Aug 2013.



Fig. 4. *Pimelea orthia*, Waionui Covenant Area. Photo: J. Salter, 17 Aug 2013.

sand. Here we found *Leucopogon fraseri*, *Morelotia affinis*, a few individuals of *Drosera auriculata* and some small *Pimelea*, likely to be an erect form of *P. prostrata*, now known as *P. orthia* (Fig. 4). *Ozothamnus leptophyllus* and the exotic *Ornithopus pinnatus* were two species present here that are more typical of the dune country on the western side of Waionui Inlet. *Crassula decumbens* and *Sagina apetala* were amongst the smallest plants found here.

On the descending arm of the loop track we paused at a viewing point which provided views of the Waionui Inlet mudflats, and the expansive sand dunes of the South Kaipara Air Weapons Range on the western side of the inlet. We also admired the

large specimens of native broom *Carmichaelia australis* growing nearby. Further on, two specimens of the small exotic daisy *Facelis retusa* were found together beside the track, another addition to the species list for the area. A spring-fed stream at the bottom of the hill had the fern *Diplazium australe* beside it, and a patch of *Hypericum pusillum*, the taller stems of which were infected with the aerial stage of a New Zealand rust fungus, *Uromyces waipoua* (Eric Mckenzie, pers. comm. to Ewen Cameron, voucher PDD 103320). Weeds present here included inkweed (*Phytolacca octandra*) and woolly nightshade (*Solanum mauritianum*), both of which are common at South Kaipara Head.



Fig. 5. Forest margin, Waionui Inlet Marginal Strip. Photo: J. Salter, 17 Aug 2013.



Fig. 6. *Mazus novaezeelandiae*, Waionui Inlet margin. Photo: J. Salter, 17 Aug 2013.

For the second part of the day, we drove a short distance further south down Lagoon Rd then walked into the forest between the road and the inlet, an area administered by the DoC as the Waionui Inlet Marginal Strip (Fig. 5). Here we quickly encountered a sizeable patch of *Lobelia* aff. *angulata*, a taxon possibly endemic to South Kaipara Head, growing in typical habitat of kanuka litter and mosses. The orchid *Nematoceras triloba* was common here, as was sword sedge *Lepidosperma laterale*.

Closer to the inlet edge, on wetter ground, the kanuka gives way to manuka, interspersed with cabbage trees (*Cordyline australis*). It was on muddy ground here that we encountered another significant species in the area, *Mazus novaezeelandiae* (Fig. 6), growing mostly in dense patches along animal tracks amongst otherwise dense *Machaerina juncea*. The only other known population in the Auckland region are plants which may still persist on the western margin of the Okahukura Peninsula. Other low-growing plants occupying the same habitat included *Ranunculus amphitrichus*, *Isolepis distigmatosa* and *Hydrocotyle novae-zeelandiae*. *Mentha cunninghamii* (Fig. 7) scrambles up through the *Machaerina* in this area, and we found a sizeable patch, although not with any flowers. *Galium propinquum* was found in similar places. Duckweed (*Lemna disperma*) was in at least one area of standing water.

Also on the inlet margin, we located a single individual of the fern *Cyclosorus interruptus* (Fig. 8), a species only sparsely encountered along this wetland strip, and perhaps found nowhere else in the Auckland region. It was growing beside a shrub of *Olearia solandri*, a patchily distributed species along the inlet margin. Beyond the manuka, species found further into the inlet include *Machaerina articulata*, *Bolboschoenus fluviatilis*, *Phormium tenax*, *Typha orientalis* and *Apodasmia similis*. Swamp millet (*Isachne globosa*) is found amongst taller sedges and rushes here also.

Numerous dead pampas (*Cortaderia selloana*) were the result of annual weed control undertaken by the Department of Conservation to protect the threatened, indigenous plants here. Mexican devil (*Ageratina adenophora*) is another species targeted by the same control programme, being reduced mainly by hand-pulling in areas where it threatens to out-compete *Mazus novaezeelandiae*. *Aristea ecklonii* is now abundant beside the road, as well as being found in drier forest areas, but is considered too well established at present for control to be undertaken.

References

Cameron, E.K.; Bellingham, P.J. 2002: Vascular flora of the fringes of the Waionui Inlet, Kaipara South Head. *Auckland Botanical Society Journal* 57: 88-96.



Fig. 7. *Mentha cunninghamii*, Waionui Inlet margin. Photo: J. Salter, 17 Aug 2013.



Fig. 8. *Cyclosorus interruptus*, Waionui Inlet margin. Photo: D. Wilson, 17 Aug 2013.

Vascular plants seen at Waionui Inlet, Kaipara Harbour, 17 Aug 2013

* = exotic species

Pl. = planted species

Ferns

Asplenium flaccidum
Asplenium polyodon
Blechnum novae-zelandiae
Cyathea medullaris
Cyclosorus interruptus
Diplazium australe
Dicksonia squarrosa
Doodia australis
Microsorium pustulatum
Paesia scaberula
Pneumatopteris pennigera
Pteridium esculentum
Pteris tremula
Pyrrhosia eleagnifolia
Schizaea bifida

Conifers

Pinus radiata * pl.

Dicotyledons

Ageratina adenophora *
Anagallis arvensis *
Avicennia marina
Cardamine hirsuta *
Carmichaelia australis
Centaureum erythraea *
Centella uniflora
Coprosma crassifolia
C. rhamnoides
C. robusta
Corokia cotoneaster
Cotula australis
Crassula decumbens *
Drosera auriculata
Erica lusitanica *
Euphorbia peplus *
Facelis retusa *

Galium propinquum
Geniostoma ligustrifolium
Hebe stricta
Hydrocotyle novae-zeelandiae
Hypericum pusillum
Kunzea ericoides
Lagenophora stipitata
Leptecophylla juniperina
Leptospermum scoparium
Leucopogon fasciculatus
Leucopogon fraseri
Lobelia anceps
Lobelia aff. angulata
Lotus pedunculatus *
Lupinus arboreus *
Mazus novaezeelandiae
 subsp. *impolitum*
Melicactus ramiflorus
Mentha cunninghamii
Muehlenbeckia complexa
Myrsine australis
Olearia furfuracea
O. solandri
Ornithopus pinnatus *
Oxalis exilis
Ozothamnus leptophyllus
Paraserianthes lophantha *
Parsonsia sp.
Pelargonium inodorum
Persicaria decipiens
Physalis peruviana *
Phytolacca octandra *
Pimelea orthia
Piper excelsum
Plagianthus divaricata
Prunella vulgaris *
Pseudopanax lessonii
Pseudopanax crassifolius x *P. lessonii*

Ranunculus amphitrichus
Senecio bipinnatisectus *
Solanum mauritianum *
Solanum nigrum *
Solanum nodiflorum
Sophora chathamica

Monocotyledons

Apodasmia similis
Machaerina articulata
M. juncea
Bolboschoenus fluviatilis
Carex flagellifera
C. virgata
Cordyline australis
Cortaderia selloana *
Austroderia splendens
Cyperus ustulatus
Eleocharis acuta
Isachne globosa
Isolepis distigmata
Ficinia nodosa
Juncus planifolius
Lemna disperma
Lepidosperma laterale
Microlaena stipoides
Morelotia affinis
Nematoceras triloba
Oplismenus hirtellus
Paspallum vaginatum *
Phormium tenax
Poa pusilla
Schoenus maschalinus
Sporobolus africanus *
Stenotaphrum secundatum *
Thelymitra sp.
Typha orientalis
Zoysia pauciflora

Motukaha – the vascular flora of a small island off western Waiheke Island, Hauraki Gulf

Ewen K. Cameron

Introduction

Motukaha is a small island (0.4 ha, Taylor 1989) between Church and Fossil Bays on the western side of Waiheke Island, inner Hauraki Gulf, Auckland (lat. 36° 47' 47" S, long. 174° 59' 9" E, 16 m asl) (Figs. 1–3). There is a good introduction to the island covering landform, geology, flora, fauna and archaeology by Mike Lee (1999) as part of his survey of the biota of seven islets off Waiheke Island during 1996–97. The ownership is "uninvestigated", probably customary Maori land (Lee 1999). The

name Motukaha ("strong island") suggests that the island was once a fortified strongpoint in Maori times (Lee 1999) and its flat-top was probably levelled by Maori during those times. Midden shells are locally common eroding out of the cliffs in several places (pers. ob.).

The Motukaha cliffs are composed of eroded Waitemata sediments on the south and east sides, eroded greywacke rock forms the west (Fig. 4) and north sides, and a younger zone of basal Waitemata