Killarney (Tuahu) Lakelets Field Trip

Paul Cashmore

On 10 December 2017 seven adults and 2 kids from the Waikato and Rotorua Botanical Societies turned out for a field trip to explore the Killarney or Tuahu lakelets off Wairakau Rd south of Te Aroha township and the Tuahu track. These two small lakelets, tucked away on the lower western slopes of the Kaimai Range, are little known amongst Waikato botanists. It is several decades since the Rotorua Botanical Society last visited. The lakelets sit hidden away in amongst exotic pine plantation in Waihou Forest which is currently managed by Rayonier Forests. The two small lakelets are within an 8.21 ha Conservation Covenant established between the Department of Conservation and the previous land manager, Forestry Corporation of NZ Ltd, to protect the significant conservation values present within these wetlands.

These small lakelets support the largest area of wetland vegetation in the Te Aroha Ecological District and were identified as a "Recommended Area for Protection"

Figure 1: *View over western lakelet with main Kaimai Range behind. Kahikatea forest and exotic pine forest in the background.*

(RAP) in the Coromandel Ecological Region PNA by Humphreys and Tyler (1990). Although not extensive this vegetation is very diverse and ranges from mesotrophic raupo reedland to acid peat bog vegetation (Beadel 1988; Humphreys and Tyler 1990).

After approximately one hour's walk through the exotic pine forest roads we eventually reached the western corner of the covenant area. The lakelets themselves are surrounded by a reasonable dryland buffer within the covenant area which provides an important setback from the surrounding exotic production forest. This area was historically grazed but has not had stock present for many decades. It has mostly been allowed to naturally regenerate, with some localised plantings historically undertaken by Waikato Fish and Game, as there are a few small maimais around the lakes. The surrounding buffer vegetation is a mix of rank grass of various species – sweet vernal (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), *Microlaena stipoides*, and tall fescue (*Schoedonorus phoenix*). Interspersed is blackberry (*Rubus fruticosus* agg.), with scattered mahoe, (*Melicytus ramiflorus*), lancewood (*Pseudopanax crassifolius*), gorse (*Ulex europaeus*) and patches of ring fern (*Paesia scaberula*) and kiokio (*Blechnum novae-zelandiae*). A few clearly planted species are present in this area along the south-west edge including strawberry dogwood (*Cornus capitata*) which is spreading, and a few pohutukawa (*Metrosideros excelsa*).

The western lakelet is surrounded by dense areas of harakeke (*Phormium tenax*) flaxland. Also present is local lancewood, *Machaerina* sp. with a fringe of kuta (*Eleocharis sphacelata*), swamp millet (*Isachne globosa*) and an occasional kahikatea (*Dacrycarpus dacrydioides*). We decided not to venture into the dense flaxland and continued around the southern side of the western lakelet, making our way through the regenerating shrub-grassland on surrounding slopes. This provided us with some good views of the western lakelet and surrounding vegetation as well as a panoramic view across to the backdrop of the main Kaimai Range. It was on these hillslopes that we decided it was about time for lunch before we headed into the wetland proper.

After lunch the group headed into the area of wetland proper between the two lakelets hoping to make a complete traverse to the northern side. The wetland here consisted of scattered manuka-*Epacris pauciflora* with bracken-*Machaerina teretifolia*-tangle fern-sphagnum sedge-fern-shrubland common throughout.

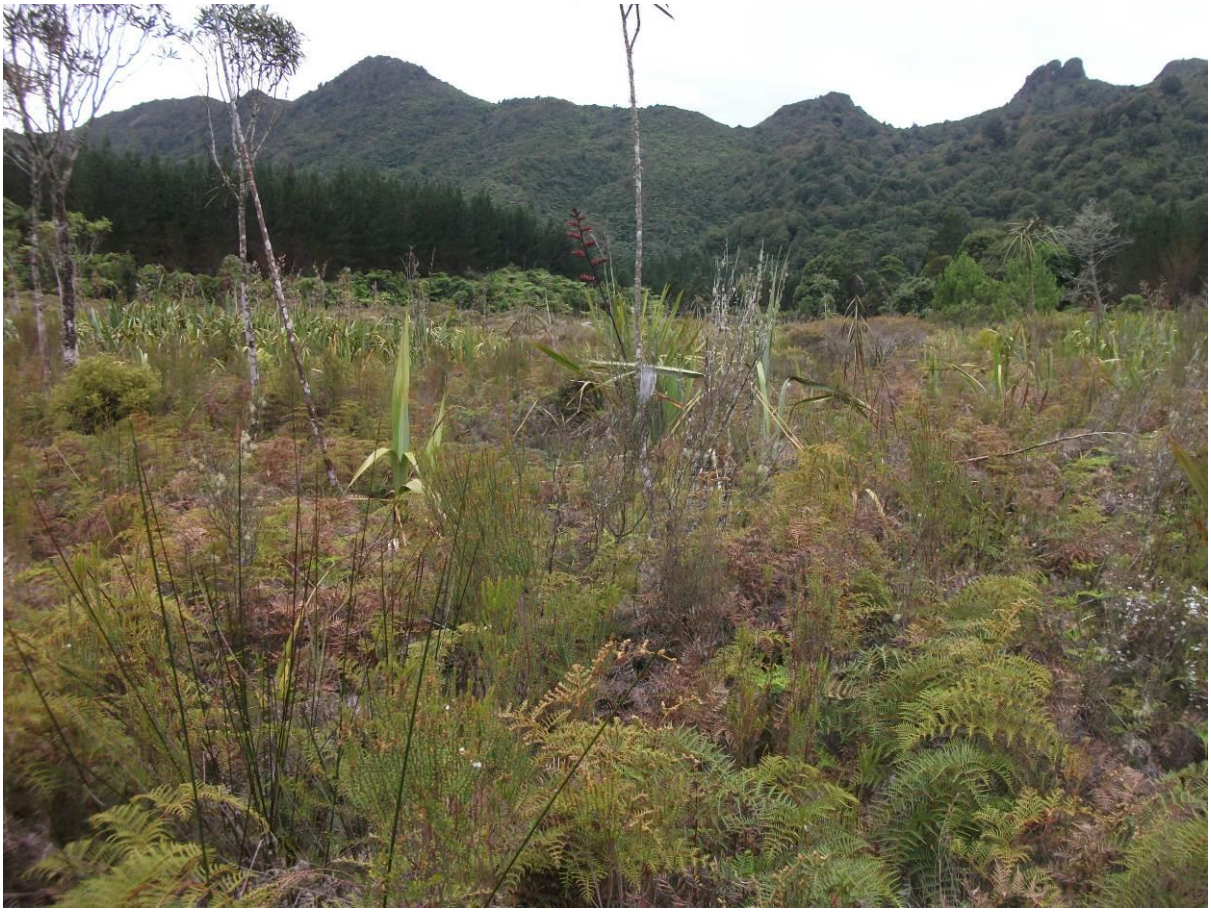

Figure 2: *Looking across the wetland area towards main Kaimai Range with dense* Epacris pauciflora*, bracken and tangle fern in the foreground with scattered lancewood present above.*

Occasional emergent lancewood were present. *Sphagnum cristatum* forms dense hummocks in places. These species were characteristic of a more acidic peat bog wetland. Other parts had denser manuka (*Leptospermum scoparium*) shrubland with occasional flax- Machaerina sp.-tangle fern present. It was interesting to note the abundance of *Epacris pauciflora* and the exotic *Erica caffra* present in this area, neither commonly encountered species in the Bay of Plenty.

We had a brief chance to look into the eastern lakelet from here. This water body has dense areas of harakeke flaxland together with other dense areas of *Machaerina articulata* and more swamp millet. Both lakes appear to have occasional grey willow (*Salix cinerea*) present which doesn't appear to have changed density since my last visit in 2005.

Reaching the relative safety of dry land on the northern side we made our way around the edge in a western direction through the taller forest remnants. The eastern part of the northern forest remnant comprised scattered emergent

(kahikatea)/wheki-mapou-(lancewood) scrub-treefernland. Moving west we entered the main dense kahikatea forest stand with occasional pukatea (*Laurelia novae-zelandiae*) present. The understorey here was a mixture of pigeonwood (*Hedycarya arborea*), wheki (*Dicksonia squarrosa*), mapou (*Myrsine australis*), kahikatea saplings and supplejack (*Ripogonum scandens*). Climbing ratas were common including *Metrosideros diffusa*, *M. perforata* and *M. fulgens.* Areas of dense ring fern were present higher up the slope near the pine boundary. We also came across a small number of reasonably large silver beech (*Lophozonia menziesii*) trees which are believed to be planted. Two mature tawa (*Beilschmiedia tawa*) were also noted.

Several forays onto the wetland edge were made while traversing through the kahikatea stand. Unfortunately, here we found an infestation of royal fern (*Osmunda regalis*) – a very invasive exotic wetland fern which has spread through many Waikato wetlands and is sparsely present in many Bay of Plenty wetlands as well. There were a small number of quite large individuals with spores present. Luckily, I had my trusted herbicide gel and pruning saw so was able to tackle these and bag the spores for later disposal. We didn't find any more, which was a good sign, so it was definitely a controllable infestation, but it will require ongoing monitoring as there are likely to be further plants establishing in the future. On a more positive note, further searching immediately below the kahikatea stand with the aid of a GPS location reconfirmed the nationally threatened stout water milfoil (*Myriophyllum robustum*) population was still present at this site. Approximately 15 stems were counted in an area of 40 x30 cm. This population has been known since 1988 when it was recorded by Sarah Beadel (Beadel 1988).

After one more foray out to the edge of the western lakelet and nothing further noted of interest, we headed back out of the kahikatea forest and made our way through the ring fern and blackberry to the point we had entered the wetland off the forestry road at the western end. We had taken a day to circumnavigate the western lakelet and had only briefly glimpsed the eastern lakelet. It was good to see the wetland was still in relatively good condition with all the similar species assemblages including threatened flora present that were recorded when I last visited in 2005.

References

Beadel, S.M. 1988: Assessment of the botanical conservation values of four areas in the Bay of Plenty District, Department of Conservation - Tuahu Lakelets, Kaimai Range. Report prepared for Department of Conservation, Rotorua. 24 p.

Humphreys, E.A. and Tyler, A.M. 1990: Coromandel Ecological Region. New Zealand Protected Natural Areas Programme. Department of Conservation, Waikato Conservancy, Hamilton. 283 p.

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Killarney (Tuahu) Lakelets Covenant vascular plant species list

Thomas Emmitt
& Rotorua and Waikato Botanical Societies

Visit: 10 December 2017
*= additions to species lists of S.M. Beadel (1988) and G. Jane (2004 (unpubl)).
= naturalised species

Gymnosperm Trees

* *Dacrydium cupressinum*
Dacrycarpus dacrydioides
\# *Pinus pinaster* ssp. *pinaster*
#* *Pinus radiata*
* *Phyllocladus trichomanoides*
* *Podocarpus totara*
* *Prumnopitys ferruginea*

Monocotyledonous Trees and Shrubs

Cordyline australis
* *Cordyline banksii*
* *Rhopalostylis sapida*

Dicotyledonous Trees & Shrubs

* *Aristotelia serrata*
* *Beilschmiedia tawa*
* *Betula pendula*
* *Brachyglottis repanda*
* *Carpodetus serratus*
* *Coprosma grandifolia*
* *Coprosma lucida*
Coprosma robusta
Coprosma tenuicaulis
\# *Cornus capitata*
* *Dysoxylum spectabile*
* *Elaeocarpus dentatus* var. *dentatus*
* *Epacris pauciflora*
#* *Erica caffra*
* *Erica lusitanica*
* *Fuchsia excorticata*
Gaultheria antipoda
Geniostoma ligustrifolium var. *ligustrifolium*
Griselinia lucida
* *Hedycarya arborea*
Knightia excelsa
Laurelia novae-zelandiae
Leptospermum scoparium var. *scoparium*
Leucopogon fasciculatus
Leucopogon fraseri
* *Litsea calicaris*
#* *Leycesteria formosa*
* *Melicope simplex*
Melicytus ramiflorus
Myrsine australis
* *Piper excelsum* subsp. *excelsum*
Pseudopanax arboreus
Pseudopanax crassifolius
* *Pseudowintera axillaris*
#* *Rubus fruticosus agg.*
#* *Salix cinerea*
Schefflera digitata
\# *Ulex europaeus*
Weinmannia racemosa

Dicotyledonous Lianes and Related Trailing Plants

* *Clematis paniculata*
#* *Lonicera japonica*
* *Metrosideros diffusa*
* *Metrosideros fulgens*
* *Metrosideros perforata*
Muehlenbeckia australis
* *Ripogonum scandens*
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Monocotyledonous Lianes

* *Freycinetia banksia*

Lycophytes (clubmosses, selaginella, quillworts)

* *Lycopodium volubile*
* *Phlegmariurus varius*
* *Tmesipteris elongata*
* *Tmesipteris lanceolata*

Ferns

* *Adiantum cunninghamii*
* *Asplenium flaccidum*
* *Asplenium oblongifolium*
* *Asplenium polyodon*
* *Austroblechnum lancoelatum*
Cyathea dealbata
Cyathea medullaris
Dicksonia squarrosa
Gleichenia microphylla
* *Histiopteris incisa*
* *Hymenophyllum flabellatum*
Hypolepis distans
* *Icarus filiformis*
* *Lastreopsis glabella*
* *Lastreopsis hispida*
* *Leptopteris hymenophylloides*
* *Microsorum pustulatum* subsp. *pustulatum*
* *Microsorum scandens*
#**Osmunda regalis*
Paesia scaberula
Parablechnum minus
Parablechnum novae-zelandiae
* *Pneumatopteris pennigera*
Pteridium esculentum
* *Pyrrosia eleagnifolia*
* *Rumohra adiantiformis*
* *Trichomanes venosum*

Orchids

* *Earina mucronata*

Grasses

\# *Anthoxanthum odoratum*
\# *Holcus lanatus*
Isachne globosa
Microlaena stipoides
#**Schedonorus arundinaceus*

Rushes and Allied Plants

* *Carex dissita*
Carex secta
* *Eleocharis acuta*
Eleocharis sphacelata
Gahnia xanthocarpa
\# *Juncus articulatus*
#* *Juncus effusus*
* *Juncus gregiflorus*
Machaerina articulata
Machaerina rubiginosa
* *Machaerina tenax*
Machaerina teretifolia

Monocotyledonous Herbs

* *Astelia fragrans*
Astelia hastata
* *Astelia solandri*
Dianella nigra
Phormium tenax
Typha orientalis

Dicotyledonous Herbs - Composites

#* *Achillea millefolium*
#* *Hypochaeris radicata*
#* *Leontodon taraxicoides*
#* *Leucanthimum vulgare*
#* *Mycelis muralis*

Dicotyledonous Herbs other than Composites

* *Acaena novae-zelandiae*
\# *Digitalis purpurea*
* *Drosera binata*
* *Gonocarpus incanus*
* *Hydrocotyle dissecta*
Hydrocotyle heteromeria
\# *Lotus pedunculatus*
Myriophyllum propinquum
Myriophyllum robustum
Nertera depressa
\# *Plantago lanceolata*
\# *Ranunculus repens*
Wahlenbergia violacea