

A robust, broad-leaved form of this species is plentiful in the manuka fringes.

Empodisma minus (Hook.f.) L.A.S.Johnson & D.F.Cutler

This peat-forming restiad is a feature species of the site, occurring both in the manuka fringes where it grows almost as a liane in the undergrowth, and densely on the dome itself. It was in flower during our visit. The pinkish-grey, sphagnum-like root mats which grow upright attracted much attention, and when dead form the main body of peat of the dome (see Clarkson *et al.* 2002).

* *Holcus lanatus* L.

Yorkshire fog was recorded from the disturbed margins.

* *Juncus effusus* L.

In the outer part of the manuka fringe.

Juncus pallidus R.Br.

In the outer part of the manuka fringe.

Juncus planifolius R.Br.

Beside drainage channels in the manuka fringe.

Juncus prismatocarpus R.Br.

Beside drainage channels in the manuka fringe.

Phormium tenax J.R. & G.Forst.

Manuka fringe.

Schoenus brevifolius R.Br.

This rush-like sedge is dominant in places on the peat dome, growing to 0.5 m tall.

Sporadanthus ferrugineus de Lange, Heenan & B.D.Clarkson

Known as bamboo rush, it is the dominant late successional species of raised peat bogs. The culms are 10-15 mm diameter and 1- 4 m tall (de Lange *et al.* 1999).

Thelymitra cyanea (Lindl.) Benth.

Frequent on more open, bare places on the peat dome.

Typha orientalis C.B.Presl

Raupo occurs only on the outer margins,

References

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Field Trip: Howarth Memorial Wetland, Te Aroha. 16/10/04

Mike Wilcox

The Howarth Memorial Wetland in Te Aroha, is managed by the Auckland/Waikato Fish & Game Council as a wildfowl refuge. Auckland Bot Soc visited the wetland on 16 October 2004 as part of our "Te Aroha weekend". Our group was accompanied by Te Aroha Fish & Game Association people *Ross Johnson, Guy Rasmussen, Ron Hannah, Ray Needham and Irene Needham*, who showed us around and told us something of the history and management of the area.

The wetland (Map Reference: 260-T13, 487-493, 026-034) lies beside the Waihou River. It is essentially man-made as the main pond was dug out in the 1940's, followed later by a tree-planting project to beautify the area and provide habitat for wildfowl.

Cultivated trees

Much work has been done over a period of forty years to establish a woodland fringe of mostly deciduous trees surrounding the wetland. Many of these have

done well and resulted in impressive groves. Among the most successful have been pin oak (*Quercus palustris*), Algerian oak (*Quercus canariensis*), mazzard or wild cherry (*Prunus avium*), black walnut (*Juglans nigra*), and swamp cypress (*Taxodium distichum*) – this latter in the wetland itself.

Crack willow (*Salix fragilis*) had invaded the wetland but Fish & Game has managed to kill most of it. Tree species recorded are listed below.

<i>Acacia melanoxylon</i>	blackwood
<i>Acer negundo</i>	box elder
<i>A. pseudoplatanus</i>	sycamore
<i>Amelanchier canadensis</i>	shadblow serviceberry
<i>Arbutus unedo</i>	strawberry tree
<i>Castanea sativa</i>	sweet chestnut
<i>Catalpa bignonioides</i>	Indian bean tree
<i>Cinnamomum camphora</i>	camphor laurel
<i>Cordyline australis</i>	cabbage tree

<i>Cornus florida</i>	flowering dogwood
<i>Corylus avellana</i>	hazelnut
<i>Dacrycarpus dacrydioides</i>	kahikatea
<i>Dacrydium cupressinum</i>	rimu
<i>Dendrobenthamia capitata</i>	Himalayan strawberry tree
<i>Diospyros lotus</i>	date plum persimmon
<i>Fraxinus americana</i>	white ash
<i>F. angustifolia</i>	narrowleaf ash
<i>F. excelsior</i>	european ash
<i>F. ornus</i>	manna ash
<i>F. pennsylvanica</i>	green ash
<i>Gleditsia triacanthos</i>	honey locust
<i>Hoheria populnea</i>	lacebark
<i>Juglans ailantifolia</i>	Japanese walnut
<i>J. nigra</i>	black walnut
<i>Maclura pomifera</i>	osage orange
<i>Nestegis lanceolata</i>	white maire
<i>Nothofagus menziesii</i>	silver beech
<i>Nyssa sylvatica</i>	tupelo
<i>Paulownia elongata</i>	Lankao paulownia
<i>Prunus avium</i>	wild cherry, mazzard
<i>P. laurocerasus</i>	cherry laurel
<i>P. mahaleb</i>	mahaleb cherry
<i>Quercus canariensis</i>	Algerian oak
<i>Q. cerris</i>	Turkey oak
<i>Q. ilex</i>	holm oak
<i>Q. nigra</i>	water oak
<i>Q. palustris</i>	pin oak
<i>Salix fragilis</i>	crack willow
<i>S. matsudana</i> 'Tortuosa'	corkscrew willow
<i>Sorbus aucuparia</i>	rowan, mountain ash
<i>Styphnolobium japonica</i>	pagoda tree

<i>Styrax japonicus</i>	snow drop tree
<i>Taxodium distichum</i>	swamp cypress

Wetland and marginal plants

There are numerous sedges present, those recorded being *Baumea articulata*, *Bolboschoenus fluviatilis*, *Carex lurida*, *Carex lessoniana*, *Carex subdola* (in flower), *Carex scoparia* and *Cyperus eragrostis*. Other wetland plants observed were reed sweetgrass (*Glyceria maxima*), parrot's feather (*Myriophyllum aquaticum*), beggar's ticks (*Bidens frondosa*), spearwort (*Ranunculus flammula*), lady's smock (*Cardamine pratensis*), primrose willow (*Ludwigia peploides*), willow herb (*Epilobium tetragonum*), creeping jenny (*Lysimachia nummularia*) and rootless duckweed (*Wolffia australiana*).

In the weedy fringes of the wetland was meadow foxtail (*Alopecurus pratensis*), very prominently in flower, tall fescue (*Schedonorus phoenix*), cocksfoot (*Dactylis glomerata*), marsh bedstraw (*Galium palustre*), wild radish (*Raphanus raphinistrum*), Queen wild carrot (*Daucus carota*), hemlock (*Conium maculatum*), prickly sow thistle (*Sonchus asper*), periwinkle (*Vinca major*), creeping buttercup (*Ranunculus repens*), creeping cinquefoil (*Potentilla reptans*), Japanese honeysuckle (*Lonicera japonica*), onion weed (*Allium triquetrum*), and red dead nettle (*Lamium purpureum*). A weed to catch particular attention was lily of the valley vine (*Salpichroa origanifolia*) which formed rampant colonies on old burning heaps.

Field Trip: Mt Te Aroha. 17/10/04

Mike Wilcox

Our group assembled at the foot of Mt Te Aroha and 8 am on Sunday 17th October 2004, ready to spend the day on the mountain. We were most fortunate in striking a rare fine, warm day for the climb. For the record book, we took 4 hours to get up to the top at 950 m, and about 3 hours to get down, thus filling in the day without difficulty. Those in the ascent party were Doug Ashby, Jane Ashby, Lisa Clapperton, Brian Cumber, Bev Davidson, Geoff Davidson, Leslie Haines, Graeme Hambly, Anthony Keen, Joan Kember, Alistair MacArthur, Juliet Richmond, Doug Shaw, Shirley Tomlinson, Alison Wesley, Mike Wilcox and Maureen Young. Another group – Enid Asquith, Paul Asquith, Jan Butcher, Jane Hart and Graeme Jane – explored the lower slopes and also ventured across to the Tui Road area.

The first part of the track – from the Te Aroha Domain (30 m asl) to Bald Spur (Whakapipi Lookout, 350 m) – goes through lowland forest with plentiful kohekohe (*Dysoxylum spectabile*), puriri (*Vitex lucens*), mangeao (*Litsea calicaris*), rewarewa (*Knightia excelsa*), kanuka (*Kunzea ericoides*) and tawa (*Beilschmiedia tawa*) as

the dominant native trees. There are numerous old planted exotic trees here as well, including radiata pine (*Pinus radiata*), maritime pine (*Pinus pinaster*), macrocarpa (*Cupressus macrocarpa*), lawsoniana (*Chamaecyparis lawsoniana*), white peppermint (*Eucalyptus pulchella*), tree privet (*Ligustrum lucidum*), and cherry laurel (*Prunus laurocerasus*). Perhaps the most spectacular botanical highlight along the Bald Spur Track was "parataniwha gully" – a large steep, shaded face clothed in a pure stand of parataniwha (*Elatostema rugosum*).

Other items of particular interest were *Carex spirostris* in flower, towards the start of the walk, colonies of the prostrate liverwort-like moss *Achrophyllum quadrifarium* on damp banks, good patches of *Corybas macranthus* in flower (and a magnificent *Corybas acuminatus*), and lowland ferns such as *Cyathea medullaris*, *Cyathea dealbata*, *Asplenium lamprophyllum*, *Blechnum chambersii*, *Blechnum novae-zelandiae*, *Adiantum cunninghamii*, and *Adiantum fulvum*.