

Field Trip: Waima Forest, Northland, Anniversary Weekend. 24 – 27 January 2003

Maureen E. Young, Steve Benham, Timothy J. Martin & Ewen K. Cameron

The party consisted of 21 people: Enid Asquith, Paul Asquith, Steve Benham, Jan Butcher, Ewen Cameron, Helen Cogle, Janeen Collings, Brian Cumber, Geoff Davidson, Lisa Forester, Leslie Haines, Graeme Hambly, Wynne Jones, Tim Martin, Alex Mckenzie, Helen Preston-Jones, Carol Ralph, C J Ralph, Shirley Smith, Alison Wesley, and Maureen Young. Lisa was leader, Maureen was the instigator and coordinator, and Paul the cellarmaster.

Frampton Hut – the party packed and ready to depart (Photo: T.S. Martin)



Introduction

Maureen E. Young

The Waima Forest covers a large area of extremely rugged country to the east of Opononi, on the shores of the Hokianga Harbour. Within this forest are many high hills, with Te Raupua, at 781 m asl, the highest point in Northland. The underlying rocks of the area are volcanic, of the Tangihua Group and Waipoua Basalts (Geological maps of NZ, North Cape & Whangarei, 1961). At latitude 35 ° 30' S, 173° 30' E, it has the mild, humid, almost subtropical climate typical of Northland, but as was the case on this trip, strong, rain laden winds may blow from the west or south west.

The Waima Forest is administered by the Department of Conservation (DOC), and is traversed by the Waoku Coach Road Track. The Hauturu Highpoint Track can be accessed from the Waiotemarama Gorge Road and leads up to the Hauturu Trig (679 m). To the north of Hauturu, and on the western fringes of the Waima Forest is an area of rough farmland and cut-over bush known as the Frampton Block. DOC has recently purchased this block, after the discovery of *Ackama nubicola*, a new addition to the New Zealand flora.

This trip was organised with the intention of visiting the site of *Ackama nubicola*, and also to climb Hauturu

to see *Olearia crebra* and *Coprosma waima*, all three species endemic to the Waima Forest and having been found in the last 20 years.

Friday 24 January

After a rendezvous at the Opononi Pub on Friday afternoon, we proceeded in convoy to the end of Mountain Road, where our vehicles were left. Thanks to the sterling support we always receive on Northland trips from DOC botanist Lisa Forester, and on this occasion from Warren Morunga of Kauri Coast DOC, our food and gear was packed onto a ute, and two trailers towed by four-wheeled bikes. These vehicles were driven over farm tracks to our destination, the Frampton Hut, while the rest of us walked in on the Six Foot Track. Seeing several plants along the track of the northern endemic shrub, *Colensoa physaloides*, and being introduced to *Dianella "Waima"*, set the tone for a botanically exciting weekend.

The Frampton Hut is a primitive little affair, set among tea tree and rough grassland, and is most notable for its lack of running water. However, there was room for 5 sleeping bags to be unrolled, and for the gas bottles, cookers and food to be housed, and on Sunday morning the veranda proved to be adequate for sheltering a small choir as they sang 'Rule Britannia' to the rain god. A tent village quickly grew



Fig. 1. (top) View towards Waimamaku Beach from Hauturu summit with *Quintinia serrata*, *Olearia crebra*, *Phormium tenax*, and *Gahnia* sp. in foreground (left to right). Hauturu Trig. (Photo: T.S. Martin, 26 January 2003).

Fig. 2. (middle left) *Ackama nubicola*, new leaves red, stipules cream expanded leaves green. (Photo: E.K. Cameron, 25 January 2003).

Fig. 3. (left) The discovery of *Coprosma waima* by Lisa Forester & John Beachman at Hauturu Trig, 17 April 1986. (Photo: J.G. Beachman).

Fig. 4. (above right). *Thismia rodwayi*, 2 plants, 1 on left side of white patch (flash reflection), & 1 on it's side to the right of reflection – only 1 plant noticed in field due to darkness! (Photo: E.K. Cameron 25/01/03).

around the hut. The alfresco toilet arrangements would be worthy of a mention in anybody's book of 'Dunnies I have known', but served the purpose for the short visit.

Saturday 25th January:

Steve Benham

The 25th transpired as a truly wondrous day for botanising in the rugged Waima Forest. Late into Friday night and before dawn the winds and rains of Northland threatened to lift the tents and drench those of us hardy and courageous enough to sleep under canvas. Despite the vagaries of camping in a cloud forest, those of us kept awake by the elements could enjoy the callings of a male kiwi (*Apteryx australis*) and the slightly haunting and monotonous callings of the morepork (*Ninox novaezelandiae*). Next door, life in the 'five star' bach emerged, and it was all rostered kitchen hands to the 'galley' with bacon and eggs on the menu.

As I was scouring fat encrusted frying pans in bowls of boiling water outside the bach, my mind cogitated on the randomly growing clumps of manuka (*Leptospermum scoparium*) in the cattle grazed paddock in front of the bach. Plants varied in height from 15-30cm. In some cases there were three to seven manuka plants grouped together, suggesting that cowpats had proved ideal 'seed beds' for wind blown manuka seed. The nutrient value of the cowpat would be sufficient to sustain good growth as well as acting as a deterrent to cattle grazing, as they avoid grazing near their own dung. This paddock will eventually revert to bush as an indirect result of cattle grazing.

With packed lunches bulging from our rucksacks and dressed against the cold and soggy weather, we mustered in front of the bach, discussing and studying under hand lenses the morphological differences between juvenile towai (*Weinmannia silvicola*) and adult makamaka (*Ackama rosifolia*), before heading off with Lisa Forester as our leader. One of our first stops, fifteen minutes up the track, was to don our waterproofs, and it wasn't long before the track turned into a rivulet. Sheltering in the lee of tawheowheo (*Quintinia serrata*), we cogitated about molecular science and the phylogenetic relationships of the taxon *Quintinia* and where it currently sits in relation to the plant families Escalloniaceae, Grossulariaceae and Saxifragaceae. Saxifragaceae is often cited in literature as having nomenclatural priority. However, tawheowheo with attractive wavy / crimped edged and mottled leaves is a familiar tree to the Waitakere botanist. Hutu (*Ascarina lucida*) also occurred on the regenerating forest margins, preferring disturbed sites with ample light. One specimen was approximately 3m high and heavy with immature fruit. (Tim Martin who has just completed an MSc on this species was the first to spot it). A crushed leaf of hutu – Chloranthaceae, released a spicy scent reminiscent of

the Australian atherospermaceous southern sassafras *Atherosperma moschatum*.

Graeme Hambly and I broke away from the already dispersing group, as we were keen to focus on the aptly named and recently described *Ackama nubicola* (the specific epithet meaning cloud dweller).

I had visited the site almost a year ago with Warren Morunga (DOC) when negotiating with local iwi over the possibilities of displaying a plant at the Auckland Regional Botanic Gardens. We had planned to display the species as a caged specimen together with an interpretational sign, similar to the theatrical techniques employed by the Royal Botanic Gardens in Sydney when promoting the wollemi pine (*Wollemia nobilis*). The local Whirinaki iwi were also very enthusiastic with the idea, and they considered having the plant propagated with some of the proceeds going towards their local conservation efforts. Regrettably the idea crumbled due to a couple of very vociferous Botanic Garden's stakeholders opposing the proposal of displaying plants in cages.

Heading up the water-worn track, the native prostrate herb *Gonocarpus micranthus* sprawled over 'islands' of clay, conspicuous by its bright red and shining flower buds in terminal racemes. On the forest margins were almost pure, dense stands 3 metres in height of the highly attractive ramarama (*Lophomyrtus bullata*) with their shiny, red-blotched and blistered leaves. As we gained height and left the track behind us, there were grazed paddocks with naturalising *Aristea ecklonii*. This African weed should be controlled before numbers explode, which may well happen as pastures are retired from grazing. The occasional forest remnant lay ahead, with promising regenerating forest on our right merging into maturing forest with fabulous distant views of the ocean out to the west. Species recorded were *Ackama rosifolia* (which is sympatric with *Ackama nubicola*), *Aristotelia serrata*, *Coriaria arborea*, *Cyathia cunninghamii*, *C. smithii*, *Dicksonia squarrosa*, *Geniostoma ligustrifolium* var. *ligustrifolium*, *Hebe* aff. *acutiflora*, *Knightia excelsa*, *Metrosideros robusta*, *Olearia rani* var. *rani* and *Raukaua edgerleyi*. A single *Agathis australis* (kauri) six to seven metres high was seen 50m in from the paddock.

There were several saddles to cross before reaching the turoa onamata (*Ackama nubicola*) site. The severity of the wind added to the excitement and at times we were reduced to crawling on 'all fours'! A small population of the giant bryophyte *Dawsonia superba* surprised us by surviving in an exposed paddock habitat alongside an animal trail on the side of the saddle.

We briefly met up with a small group of our party who couldn't wait to inform us of their remarkable discovery that we had missed. Maureen swiftly and jokingly remarked 'you should have stayed behind with the botanists!' After hearing of their botanical find,

the subterranean parasite *Thismia rodwayi* belonging to Thismiaceae, we were at a loss for words and nodded dumbly in agreement. Thismiaceous members are delicate, mostly non-green plants found mainly in tropical forests, living as parasites or saprophytes. *T. rodwayi* is shared with Tasmania, found in leaf-litter and humus where thin whitish rhizomes run horizontally, producing erect little stems covered in white scale leaves. The stunningly red single flower has stamens which are fused to form a tube and tend to turn inwards and downwards, preventing pollinators from escaping without first showering themselves with pollen. We were determined to look for it on our descent and wouldn't dare to return to the bach without having seen this botanical curiosity!

On the seaward side, facing west, and growing in clumps of *Blechnum novae-zelandiae*, we were exhilarated to find juvenile *Ackama nubicola* ranging in size from 60-80cm high, together with several larger specimens on the regenerating forest margins. *A. nubicola* was first discovered in February 2000 by Karen Riddell, a DOC employee, surveying the site for possible land purchase.

Having a photocopy of the recently published paper on *Ackama nubicola* (de Lange, *et al.* 2002) we compared the detailed published description with living material.

The differences between the two sympatric *Ackama* species are so distinct that there was no question of misidentification. The new species has much larger, entire, yellow to yellow-green orbicular, glabrous stipules, with sporadic, vestigial and very inconspicuous hair-tuft leaf domatia, often absent in mature foliage. Mature stipules were found to have purple colouration at their base. Adult leaflets measured 60mm long and 32mm wide, very coarsely toothed with pulvinate (cushion/pad-shaped) petioles. Adult leaves were considerably larger with patent (short, spreading) and antrorse (curving towards the apex) hairs sparsely covering the leaf axis. The bright flamingo salmon/pink colouration in the juvenile foliage is a significant and attractive feature of turoa onamata.

Isolated specimen trees of *Ackama rosifolia*, smothered in panicles of brilliant pink / red fruits were singularly outstanding, so much so that a small group of us decided it was a prime site for lunch. It was a treat to feel the warmth of the sun on this 'winter's' day in January!

Graeme Hambly and I were eager to explore the *Ackama nubicola* site so the two of us hastily headed off. We soon reached thickets of multi-stemmed *Ackama nubicola* after scrambling down the slope and enjoyed shelter from the ferocious wind. The forest floor was littered with turoa onamata leaves and withered seed capsules stripped off by the winds. The multi-stems suggested that these plants had been

damaged in their juvenile growth stage, almost as if they had been coppiced. The trunks were most distinctive with broad bands of grey-coloured bark with alternate bands of darker grey with large and prominent lenticels. One of the larger trunks measured 460mm dbh. They all appeared to represent an even-aged cohort. We searched the area for seedling regeneration but only found a couple of seedlings, which may or may not have been *Ackama nubicola*. The ground orchid *Nematoceras macrantha* (*Corybas macrantha*) was abundant.

The wind reduced us to all 'fours' again as we clambered out onto the grassy slopes. A small rupestral clump of *Lagenifera pumila* was flowering, together with *Epilobium pubens* in fruit on a west-facing rocky outcrop.

Our final ambition for the day was to find the elusive *Thismia rodwayi*. After searching high and low, trying to follow footprints in the duff in the dappled shade of the bush, we eventually found this bizarre but wondrous parasite. Our day was complete, and Graeme remarked, 'Steve, we can now leave New Zealand.'

Lisa Forester was overwhelmingly voted 'botanist of the day' for her unbelievable encounter with the elusive *Thismia rodwayi* virtually in the dark, Lisa's 7 year-old daughter Alex the 'best spirit award' for being so perky in the rain and cold, and Graeme and Steve the wooden spoon for being every field trip-leader's nightmare!

Sunday 26 January

Timothy J. Martin

Sunday morning dawned cold, wet and windy. Heavy intermittent showers combined with low cloud, proved that the party was indeed composed of mad botanists, when at 8.30 we all ventured (voluntarily) out into the bush, a brief respite from the rain being deemed an adequate sign to begin the climb to Hauturu Trig. As for myself, I was quite accustomed to the unseasonal weather Northland can throw at you, and the chance to see the recently described Waima Range endemic, *Olearia crebra* (Cameron & Heenan 2002) and *Coprosma waima*, was all the incentive I needed to get going.

The first leg was along a 4WD track, that wound its way up through regenerating forest and shrubland dominated by towai (*Weinmannia silvicola*) and rewarewa (*Knightia excelsa*). Soon we crossed a fenceline and entered the forest proper. The track followed a steep sided ridgeline through forest with towai, rewarewa, Hall's totara (*Podocarpus hallii*), miro (*Prumnopitys ferruginea*), tawari (*Ixerba brexioides*), hinau (*Elaeocarpus dentatus*), *Raukaua edgerleyi*, the tree ferns mamaku (*Cyathea medullaris*) and katote (*Cyathea smithii*), and ferns such as *Blechnum fraseri* and *Blechnum discolor*. We also had the opportunity to

compare the differences between *Collospermum hastatum*, and *C. microspermum* (which was in flower), which were epiphytic on trees beside the track.

As we ascended, tawari, tawheowheo (*Quintinia serrata*) *Olearia rani*, and *Dracophyllum latifolium* increased in abundance, and tawa (*Beilschmiedia tawa*) became common. *Nestegis montana*, *Olearia furfuracea*, *Hebe* aff. *acutiflora* and *Blechnum procerum* were also noted.

At 11.30 as the sun came out, we stopped at a clearing just before the final ascent to the trig and all enjoyed morning tea and Brent Maxwell joined us unexpectedly.

The final ascent was through forest dominated by tawa and towai. Our arrival at the top was rewarded by extensive views towards Waipoua over the Waima Valley and it was lunchtime. Scaling the trig station I was able to see Waimamaku Beach to the west and Hokianga Harbour to the north. Several cameras were passed up and the required photographs taken. The vegetation around the trig was low forest with mahoe (*Melicactus ramiflorus*), tawheowheo, lancewood (*Pseudopanax crassifolius*), makamaka (*Ackama rosifolia*), large ti ngahere (*Cordyline banksii*), *Hebe perbella*, kanono (*Coprosma grandifolia*) and flax (*Phormium tenax*). Large, multistemmed *Olearia crebra* to c. 4 m tall were common, the large leaves with downy underside making them one of the most distinctive of New Zealand's tree daisies (Fig. 1). The largest plants of *Coprosma waima* (Fig. 3) visible from the track were only seedlings so, determined to find an

adult, I undertook a wider search. No larger *Coprosma waima* were seen, but some old flowers were found on the *Olearia crebra*, and I learnt just how steep the south face of Hauturu trig is!

Several of the party decided to explore a track heading westwards from the trig, before heading back to camp. The track followed a ridgeline that descended steeply into forest dominated by large tawa and taraire (*Beilschmiedia tarairi*) and we all admired a huge emergent northern rata (*Metrosideros robusta*). The track then ascended to a second, lower highpoint that provided wonderful views of Hauturu trig and the Hokianga Heads.

The thoughts of a hot cup of tea upon arrival then quickened our steps back to camp. Yet we still added to the species list on the return trip, when our first adult kauri (*Agathis australis*) was spotted on the southern foothills of Hauturu (Taita Valley), in the valley far below us.

Monday 27 January

Maureen E. Young

After a wonderful weekend when the motto could have been – 'Who cares about the weather when the botany is so good?' – it was just a case of cleaning up, re-loading the DOC vehicles and walking out to the cars. Several people took advantage of what must now qualify as an outlier of the Bot Soc estate, and ate lunch on the veranda of the Cogle home in Omapere, and admired the glorious view of the Hokianga Harbour.

NB Paul Asquith found the area was surprisingly unproductive for bird watching in spite of the wide variety of bush habitats. Species and numbers were relatively low with only 20 species being heard or seen. Nothing of special note - except perhaps for kiwis calling each night by the hut and a family of tuis who could only manage a single repetitive note.

Acknowledgements

Once again we are indebted to Lisa Forester, without whose help the logistics of organising a trip such as this would be so much more difficult. Thanks also to Warren Morunga and Janeen Collings of Northland DOC for their assistance.

References

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Appendix 1. Native vascular plant species seen on the Six Foot Track, the Frampton Block and the track leading to Hauturu Trig from the NE, compiled during the ABS trip.

Ferns & Fern Allies

Adiantum cunninghamii

A. fulvum

A. hispidulum

A. viridescens

Anarthropteris lanceolata

A. bulbiferum

A. flaccidum

A. lamprophyllum

A. oblongifolium

A. polyodon

Blechnum chambersii

B. discolor

B. filiforme

B. fluviatile

B. fraseri

B. membranaceum

B. nigrum

B. novae-zelandiae

B. procerum

Crepidomanes venosum

Ctenopteris heterophylla

Cyathea dealbata

C. medullaris

C. smithii

Dicksonia squarrosa

Doodia australis

Gleichenia dicarpa

G. microphylla

Grammitis billardierei
G. pseudociliata
Histiopteris incisa
Huperzia varia
Hymenophyllum armstrongii
H. demissum
H. dilatatum
H. ferrugineum
H. flabellatum
H. multifidum
H. rarum
H. revolutum
H. sanguinolentum
H. scabrum
Lastreopsis glabella
L. hispida
Leptolepia novae-zelandiae
Leptopteris hymenophylloides
Lindsaea trichomanoides
Lycopodiella cernua
Lycopodium deuterodensum
L. volubile
Lygodium articulatum
Microsorium pustulatum
M. scandens
Paesia scaberula
Pneumatopteris pennigera
Polystichum richardii
Pteridium esculentum
Pteris macilentia
P. tremula
Pyrrosia eleagnifolia
Rumohra adiantiformis
Sticherus cunninghamii
Tmesipteris elongata
T. lanceolata
T. tannensis
Trichomanes elongatum
T. reniforme

Gymnosperms

Agathis australis
Dacrycarpus dacrydioides
Dacrydium cupressinum
Phyllocladus trichomanoides
Podocarpus hallii
Prumnopitys ferruginea

Dicotyledons

Acaena novae-zelandiae
Ackama nubicola
A. rosifolia
Alseuosmia macrophylla
Aristotelia serrata
Ascarina lucida
Beilschmiedia tarairi
B. tawa
Brachyglottis kirkii var.
angustior
Brachyglottis repanda
Callitriche muelleri

Cardamine debilis
Carpodetus serratus
Centella uniflora
Clematis cunninghamii
C. paniculata
Colensoa physaloides
Coprosma arborea
C. grandifolia
C. lucida
C. parviflora
C. rhamnoides
C. robusta
C. waima
Coriaria arborea
Corynocarpus laevigatus
Dracophyllum latifolium
Drosera binata
Dysoxylum spectabile
Elaeocarpus dentatus
Elatostema rugosum
Epilobium pubens
E. rotundifolium
Euchiton gymnocephalus
Fuchsia excorticata
Gaultheria antipoda
Geniostoma ligustrifolium var.
ligustrifolium
Gonocarpus micranthus
Griselinia lucida
Haloragis erecta
Hebe aff. *acutiflora*
H. perbella
Hedycarya arborea
Hoheria populnea
Hydrocotyle moschata
Hypericum japonicum
Ixerba brexioides
Knightia excelsa
Kunzea ericoides s.l.
Lagenifera pumila
Laurelia novae-zelandiae
Leptospermum scoparium
Leptostigma setulosum
Leucopogon fasciculatus
Litsea callicaris
Lobelia anceps
Lophomyrtus bullata
Macropiper excelsa
Melicytus macrophyllus
M. ramiflorus
Metrosideros albiflora
M. diffusa
M. fulgens
M. perforata
M. robusta
Mida salicifolia
Muehlenbeckia australis
Myrsine australis
M. salicina
Nertera depressa
N. dichondrifolia

Nestegis montana
Olearia crebra
O. furfuracea
O. rani
Oxalis exilis
Parsonsia ?capsularis
Pittosporum ellipticum
P. eugenoides
P. kirkii
Pseudopanax arboreus
P. crassifolius
Quintinia serrata
Ranunculus reflexus
Raukaua edgerleyi
Rhabdothamnus solandri
Rubus australis
R. cissoides
Schefflera digitata
Senecio minimus
Solanum americanum
S. aviculare
Vitex lucens
Wahlenbergia violacea
Weinmannia silvicola

Monocotyledons

Acianthus sinclairii
Arthropodium cirratum
Astelia aff. *trinervia*
A. solandri
A. trinervia
Carex dissita
C. flagellifera
C. forsteri
C. ochrosaccus
Collospermum hastatum
C. microspermum
Cordyline australis
C. banksii
C. pumilio
Corybas trilobus
Cyperus ustulatus
Dianella "Waima"
D. nigra
Earina autumnalis
E. mucronata
Eleocharis acuta
E. gracilis
Freycinetia banksii
Gahnia lacera
G. setifolia
Ichthyostomum pygmaeum
Isolepis reticularis
Juncus planifolius
Libertia grandiflora
L. ixioides
Machaerina sinclairii
Microlaena avenacea
M. stipoides
Microtis unifolia
Molloybas cheesemanii

Nematoceras acuminatus
N. cryptanthus
N. oblonga
Oplismenus hirtellus subsp.
imbecillis
Orthoceras novaezeelandiae
Petalochilus chlorostylus
Phormium cookianum
P. tenax
Poa anceps

Pterostylis banksii
Rhopalostylis sapida
Ripogonum scandens
Rytidosperma gracile
R. unarede
Schoenus apogon
Schoenus maschalinus
Simpliglottis cornuta
Singularybas macrantha
Thelymitra ?carnea

T. longifolia
Thismia rodwayi
Typha orientalis
Uncinia banksii
U. uncinata
U. zotovii
Winika cunninghamii

Appendix 2: Adventive vascular plants of Waima Forest compiled during ABS trip Jan 2003

Ewen K. Cameron

One of the wonderful features of Waima Forest is its paucity of naturalised plants. Not surprisingly most naturalised species were seen near the start of the access track (Six Foot Track) from the top of Mountain Road, 7.5km NE of Opononi. The track starting point is further up than my 260 topo map indicated, it is actually at: 006 522333 (thank goodness for a GPS). An attempt should be made to eliminate potential environmental weeds from this area before they are transported further into the forest. Also a few weeds in the Frampton Block should be actively managed in the open areas before the cattle are removed and management continued until the open areas are regenerating back to bush. Currently there is little in

the way of a weed problem in the area, but this may quickly change when the cattle are excluded. Species like pampas grass, gorse and blackberry are present at low numbers and should be knocked back before the cattle are excluded.

The list only covers the Six Foot Track, Frampton Block (roughly from Frampton's Hut to 2.5km east mainly in the open) and the track to Hauturu Trig from Six Foot Track. The list will not be exhaustive. Only the single pine tree was possibly planted, all the rest were naturalised.

Key

6'T = only seen on Six Foot Track

* = priority for weed control

x1 = only single plant seen

Fern & fern allies

Selaginella kraussiana 6'T *

Gymnosperms

Pinus ?radiata x1

Dicotyledons

Ageratina adenophora 6'T
A. riparia 6'T *
Anagallis arvensis s.str. 6'T
Callitriche stagnalis
Centaurium erythraea
Cirsium vulgare
Conyza albida 6'T
Daucus carota 6'T
Digitaria purpurea
Gamochaeta simplicicaulis
G. spicata
Hypericum adrosaemum 6'T *
Hypochoeris radicata
Leontodon taraxacoides

Leucanthemums vulgare
Linum bienne
Lotus pedunculatus
Oenanthe pimpinelloides 6'T
Paraserianthes lophantha 6'T *
Parentucellia viscosa
Plantago australis
P. lanceolata
P. major 6'T
Prunella vulgaris
Raununculus repens
Rubus fruticosus agg. *
Senecio bipinnatisectus
S. jacobaea
Solanum mauritianum x1, 6'T *
Trifolium repens
Ulex europaeus *
Verbena litoralis 6'T

Monocotyledons

Agrostis capillaris

Anthoxanthum odoratum
Aristea ecklonii
Axonopus fissifolius 6'T
Carex longebrachiata 6'T
Cortaderia selloana
Cyperus eragrostis
Dactylis glomerata
Eragrostis brownii
Glyceria striata 6'T
Hedychium gardnerianum 6'T
Holcus lanatus
Isolepis sepulcralis AK
Juncus effusus
J. tenuis
Luzula congesta
Paspalum dilatatum
Pennisetum clandestinum 6'T
Sieglingia decumbens