

recently published autobiographical account (Davidson 2008).



Fig. 3. Geoff Davidson and Cathy Jones at Mangarakau Wetland, NW Nelson. Photo: Mike Wilcox, 9 Jan 2006.

It would be remiss not to add as a postscript to this account Geoff's role in discovery of *Parahebe* "Bamboozle", recently formally named as *Veronica jovenaloides*. Prior to its discovery, few would have thought that a distinctive species of native *Veronica* was still to be discovered within an hour's drive of Auckland city. Geoff and Sharen Graham first noticed the plant in the Ernest Morgan Reserve at Waimauku in November 2007, and Geoff took a small cutting for

growing on. He collected it thinking it might be *Jovellana repens*, although this plant is not known from the Auckland region. On seeing the plant, Peter de Lange suggested it was a *Veronica* or *Parahebe*, an identification confirmed when it flowered. Consultation with Phil Garnock-Jones, an expert on the New Zealand species of *Hebe* and related genera such as *Parahebe*, led to recognition that this was not a recent immigrant but an undescribed native species! Bot Soc became involved in searches to discover further plants at the reserve, but it proved elusive (NZPCN News, 29 June 2008, and 28 Sept 2009). Currently it is only known from a single site, close to the original discovery. Phil and Peter proceeded to study the plant in detail and describe it formally as *Veronica jovenaloides*, a member of the *parahebe* clade (Davidson et al. 2009). Geoff's footprint is clearly visible in this discovery: he was instrumental in helping get the Ernest Morgan Reserve reserved in perpetuity; he discovered the first plant in the field and recognised it as 'odd'; he decided to take a portion to 'grow on'; he alerted colleagues to it being unusual; he flowered the plant at Oratia allowing formal study; he assisted in the field work determining its status as 'Nationally Critical'; he assisted in its formal description and he has distributed plants to Bot. Soc. members and others interested in growing it on.

References

Davidson, G.R. 2008: Geoff Davidson. Pp 30-35, in: "Living with Natives: New Zealanders talk about their love of native plants" edited by Ian Spellerberg & Michele Frey, published by Canterbury University Press.

Davidson, G.R., de Lange, P.J., Garnock-Jones, P.J. 2009: Two additional indigenous species of *Veronica* (Plantaginaceae) from northern New Zealand: *V. jovenaloides*, a new and highly endangered species, and *V. plebeia* R.Br. *New Zealand Journal of Botany* 47: 271-279.

Field Trip Report: Ernest Morgan Bush Reserve, Riverhead

Geoff Davidson and Kristy Hall

Participants: Dave Allen, Tricia Aspin, Enid Asquith, Paul Asquith, Harry Beacham, Colleen Brewer, Warren Brewer, Barb Bycroft, Wes Bycroft, Ewen Cameron, Lisa Clapperton, Helen Cogle, Nelson Crosby, Brian Cumber, Bev Davidson, Geoff Davidson, Margaret Duncan, Dan Godoy, Leslie Haines, Kristy Hall, Fran Hintz, Marcel Horvath, Sara Howarth, Richard Hursthouse, Peter Hutton, Sandra Jones, Helen Lyons, Christine Major, Alana Mullin, Caroline Murdoch, Suzi Phillips, Helen Preston Jones, Juliet Richmond, Marty & Maggie Taylor, Alison Wesley, Barry Wilson, Vivienne Wilson, Kieran Whelan, Maureen Young.

Report

On 21 June 2008 a large group of 40 ABS (Auckland Botanical Society) members and guests gathered in

the car park of West Brook Winery faced with the challenge of relocating a small herbaceous plant. First collected by Sharen Graham and Geoff Davidson in November 2007 it had since proved elusive.

Twenty-six years ago Geoff Davidson was asked by Ernesta Williams if he could save her 21 ha of forest at Riverhead (Fig. 1), north of Auckland. Being a trustee of the NZ Native Forests Restoration Trust (NZNFRT) Geoff felt sure the Trust could do something. Ernesta had inherited the property jointly with her sister, Amy Norton, from their father, Ernest Morgan. His family had bought the property in 1890 after it had been heavily logged by James Maxwell who had the timber sawn at Blake's Sawmill at Riverhead. Ernest was protective of it as a block of bush and his daughters likewise looked after it all

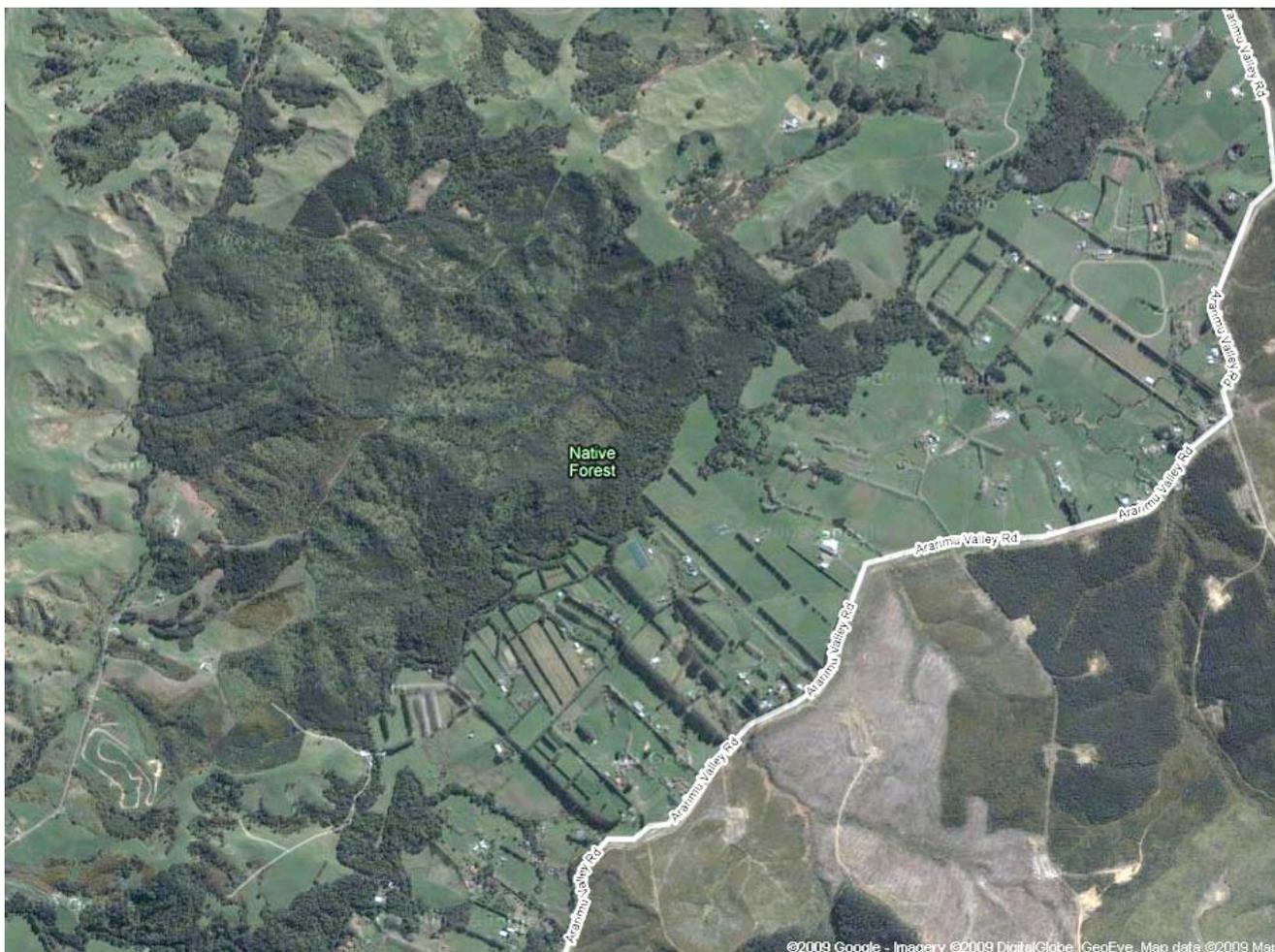


Fig. 1. Ernest Morgan Reserve aerial photograph. From: Google Earth Maps 2009.

their lives. Then in their 80's they felt the need to "cash-in" but were happy to sell at half valuation if the bush could be protected. Together with Shirley Guilford and other trustees, Geoff Davidson accepted the challenge of raising the \$20,000 asking price. The NZNFRT approached the Auckland Regional Authority and QEII National Trust, and collectively the three organisations found the necessary funds and QEII was persuaded to take ownership.

Time passed and in November 2007 Geoff suggested to the NZNFRT's field officer, Sharen Graham, that they should visit the site. After so many years it took some time to locate the legal right-of-way into the reserve and follow the Ararimu Stream to find the natural weir to cross into the reserve. Geoff and Sharen were pleasantly surprised at the healthy condition of the bush with minimal sign of possum, goats or other pests. The fences moderately intact keeping out neighbouring stock and very few weed species were evident. Their delight increased on finding rare to Auckland species such as *Nestegis cunninghamii* and *Cyathea smithii* (see Appendix 1 for the species list). There appeared to be two distinct habitat types with damp-loving broadleaf species such as pukatea (*Laurelia novae-zelandiae*) and kohekohe (*Dysoxylum spectabile*) in one catchment and more drought tolerant conifers including kauri (*Agathis*

australis), kahikatea (*Dacrycarpus dacrydioides*), and tanekaha (*Phyllocladus trichomanoides*), in the other. It was in the drier habitat that Sharen spied a creeping ground cover and asked, "What is that?" Geoff's response was a rather mumbled "Uummmm! Possibly *Jovellana repens*, but it can't be because it should not be here – this far north of Auckland". Taking a small rooted specimen, Geoff decided to grow it on and get it identified.

As more time passed, Geoff doubted his guess that it was *Jovellana*, and none of his staff at Oratia Native Plant Nursery could name it either. Eventually Geoff asked DoC botanist, Peter de Lange, for his opinion and he considered it an enigma. His best guess was that it could be a *Parahebe* or – half jokingly – a *Veronica*, although it was out of the range of any of the known species of *Parahebe*. Then in December 2007 it flowered proving indeed to be a *Parahebe* as we then knew them, but not a species previously recorded. Within days it was news that circled the globe and had taxonomists and botanists mystified. "Not possible", "Highly unlikely to be a NZ native", "Extraordinary" were some of the comments. "An exotic garden escape", "Planted", were some of the more 'helpful' suggestions.

Scepticism increased when we returned to the reserve and could not relocate the original plant despite about 80 hours of searching by four people. About then it got the nick-name "Bamboozle" because of its elusive and enigmatic nature.

The Auckland Botanical Society had heard about the mysterious plant and was keen to visit the reserve. A date was set for mid-winter (in fact, the shortest day of the year) due to the proximity of the reserve just over half an hour from central Auckland. We negotiated access through West Brook Winery and adjacent private land and, after a meandering start to get into the reserve about 40 ABS members formed up in 'line abreast' and began the search (Fig. 2). We discovered that the reserve has extensive areas of *Nertera* species which proved frustrating when searching for a superficially similar small groundcover plant. Just before lunch Tricia Aspin found a good sized patch of the plant (Fig. 3) we had come to see covering a couple of square metres on a steep slope. Tricia was particularly pleased as she had driven all the way from Awhitu Peninsula, giving her husband the explanation that she was going to try to find a plant! Despite further searching by the group no other plants were found.



Fig. 2. *Veronica jovellanoides* habitat beneath *Cyathea dealbata* canopy. Photo: K. Hall, 21/06/2008

A notable aspect of the climatic conditions is the plants association with other species within the reserve that are normally associated with cooler habitats. *Nestegis cunninghamii* is common in the reserve yet it is a very uncommon species in the Auckland region. Similarly, *Libertia micrantha*, *Cyathea smithii* and *Cortaderia fulvida* are all restricted to cool sites this far north. *Nertera villosa* is

Acknowledgements

Thanks to all those who turned up to search, and particularly to Tricia Aspen for her ultra keen eyes; QE II for permission to revisit the reserve; and also to Peter de Lange and Phil Garnock Jones for their enthusiasm and knowledge in pursuing the identification and naming of this most bamboozling Auckland endemic species.

References

Davidson G. 1987: Morgan's Reserve – ABS visit 19 July 1986. *Auckland Botanical Society Newsletter* 42: 28–30.

scarce north of the King Country, and *Lachnagrostis lyallii* has only once before been recorded north of the King Country. Additionally, the liverwort *Drucella integristipula* and the lichen *Pseudocyphellaria durietzii* are indicators of cool conditions and are more commonly associated with montane, often cloud forest, vegetation. All the above species were found either in the reserve or along the stream-banks. This is particularly surprising as the lowland forest is only a few metres above sea level. In fact the Ararimu Stream was used as a portage by Maori as it is the lowest passage when travelling between the Waitemata and Kaipara Harbours.



Fig. 3. The motivation for the trip, *Veronica jovellanoides*. Photo: K. Hall, 21/06/2008

An account of this intriguing discovery was published in the September 2009 issue of the *NZ Journal of Botany* (Davidson et al. 2009). The plant is accepted as a new species, previously overlooked, unknown and uncollected. Morphological and molecular studies suggested it was an early diverging lineage from the "parahebe" clade, but it proved not to have the normal *Parahebe* chromosome count of $2n = 42$, but along with *Parahebe decora* and most *Hebe* species it has $2n = 40$. Suggestions of its nearest relatives range from European veronicas to parahebes growing in New Guinea. In conclusion it was named *Veronica jovellanoides*, a name that reflects as much about the current thinking in regard to all hebes and parahebes as it does to the plant's potential as the missing link back to the species of *Veronica* in the Northern Hemisphere. Perhaps Forster got it right when in 1786 he named *Veronica catarractae*, *Veronica elliptica* and *Veronica salicifolia*.

Davidson, G; de Lange, P.J.; Garnock-Jones, P.J.; 2009: Two additional indigenous species of *Veronica* (Plantaginaceae) from northern New Zealand: *V. jovellanoides*, a new and highly endangered species, and *V. plebeia* R.Br. *New Zealand Journal of Botany* 47: 271-279.

Grace, A. 1998: Ernest Morgan Bush Reserve revision of plant species list. *Auckland Botanical Society Journal* 53: 83–84.

Appendix 1. Plant list for the Ernest Morgan Bush Reserve

This list is compiled from previous ABS visits: on 19 July 1986 (Davidson 1987); 18 April 1998 (Grace 1998); and additions to these from field searches in 2008 (most of the lower plant additions came from Peter de Lange) and the ABS trip on 21 June 2008 (courtesy of Maureen Young et al.). * = adventive species

Appendix 1. Plant list for the Ernest Morgan Bush Reserve

Ferns & fern allies	1986	1998	2008
<i>Adiantum aethiopicum</i>	+	+	+
<i>Adiantum cunninghamii</i>	+	+	+
<i>Asplenium bulbiferum</i>	+	+	+
<i>Asplenium flaccidum</i>	+	+	+
<i>Asplenium gracillimum</i>	+	+	+
<i>Asplenium oblongifolium</i>		+	
<i>Asplenium polyodon</i>	+	+	+
<i>Azolla rubra</i>	+	+	
<i>Blechnum chambersii</i>	+	+	
<i>Blechnum discolor</i>	+	+	
<i>Blechnum filiforme</i>	+	+	+
<i>Blechnum fraseri</i>	+	+	
<i>Blechnum membranaceum</i>	+	+	+
<i>Blechnum novae-zelandiae</i>	+	+	+
<i>Cardiomanes reniforme</i>		+	
<i>Cyathea dealbata</i>	+	+	+
<i>Cyathea medullaris</i>	+	+	+
<i>Cyathea smithii</i>	+	+	+
<i>Deparia petersenii</i>	+	+	+
<i>Dicksonia squarrosa</i>	+	+	+
<i>Diplazium australe</i>	+	+	
<i>Doodia australis</i>	+	+	
<i>Grammitis ciliata</i>	+	+	
<i>Huperzia varia</i>	+	+	+
<i>Hymenophyllum demissum</i>	+	+	+
<i>Hymenophyllum dilatatum</i>	+	+	
<i>Hymenophyllum flabellatum</i>	+	+	
<i>Hymenophyllum flexuosum</i>		+	
<i>Hymenophyllum revolutum</i>	+	+	
<i>Hymenophyllum sanguinolentum</i>	+	+	
<i>Lastreopsis glabella</i>	+	+	
<i>Lastreopsis hispida</i>	+	+	
<i>Leptopteris hymenophylloides</i>	+	+	+
<i>Lindsaea linearis</i>	+	+	+
<i>Lindsaea trichomanoides</i>	+	+	
<i>Loxogramme dictyopteris</i>	+	+	+
<i>Lycopodium deuterodensum</i>	+	+	
<i>Lycopodium volubile</i>	+	+	
<i>Lygodium articulatum</i>	+	+	+
<i>Microsorium pustulatum</i>	+	+	+
<i>Microsorium scandens</i>	+	+	+
<i>Paesia scaberula</i>	+	+	
<i>Pneumatopteris pennigera</i>	+	+	+

<i>Pteridium esculentum</i>	+	+	+
<i>Pteris tremula</i>	+	+	
<i>Pyrrhosia eleagnifolia</i>	+	+	
<i>Sellaginella kraussiana*</i>	+	+	+
<i>Tmesipteris elongata</i>	+	+	+
<i>Tmesipteris lanceolata</i>		+	+
<i>Tmesipteris sigmatifolia</i>			+
<i>Tmesipteris tannensis</i>	+	+	
<i>Trichomanes elongatum</i>			+
<i>Trichomanes venosum</i>	+	+	+

Gymnosperms

<i>Agathis australis</i>	+	+	+
<i>Dacrycarpus dacrydioides</i>	+	+	+
<i>Dacrydium cupressinum</i>	+	+	+
<i>Phyllocladus trichomanoides</i>	+	+	+
<i>Podocarpus hallii</i>	+	+	+
<i>Podocarpus totara</i>	+	+	+
<i>Prumnopitys ferrugineus</i>	+	+	+
<i>Prumnopitys taxifolia</i>	+	+	+

Dicotyledons

<i>Acaena novae-zelandiae</i>	+	+	
<i>Ajuga reptans*</i>			+
<i>Alseuosmia macrophylla</i>	+	+	+
<i>Alectryon excelsus</i>	+	+	
<i>Anaphalioides trinervis</i>		+	
<i>Aristotelia serrata</i>	+	+	
<i>Beilschmiedia tarairi</i>		+	
<i>Beilschmiedia tawa</i>	+	+	
<i>Brachyglottis repanda</i>	+	+	
<i>Carmichaelia australis</i>	+	+	+
<i>Carpodetus serratus</i>	+	+	+
<i>Centella uniflora</i>	+	+	+
<i>Cirsium vulgare*</i>		+	
<i>Clematis paniculata</i>	+	+	+
<i>Coprosma areolata</i>		+	
<i>Coprosma grandifolia</i>	+	+	+
<i>Coprosma lucida</i>	+	+	+
<i>Coprosma rhamnoides</i>	+	+	+
<i>Coprosma robusta</i>		+	
<i>Coprosma spathulata</i>	+	+	+
<i>Coriaria arborea</i>	+	+	
<i>Crataegus monogyna*</i>	+	+	
<i>Dracophyllum latifolium</i>			+
<i>Dysoxylum spectabile</i>	+	+	+
<i>Elaeocarpus dentatus</i>		+	+
<i>Geniostoma ligustrifolium</i>	+	+	+
<i>Glossostigma elatinoides</i>			+
<i>Gonocarpus incanus</i>			+
<i>Hakea sericea*</i>	+	+	+
<i>Haloragis erecta</i>	+	+	

<i>Hebe macrocarpa</i>			+
<i>Hebe stricta</i>	+	+	
<i>Hedycarya arborea</i>	+	+	+
<i>Hoheria populnea</i>		+	
<i>Hydrocotyle dissecta</i>	+		+
<i>Hydrocotyle elongata</i>		+	
<i>Hydrocotyle novae-zelandiae</i>			+
<i>Knightia excelsa</i>	+	+	+
<i>Kunzea ericoides</i>	+	+	+
<i>Laurelia novae-zelandiae</i>			+
<i>Leptospermum scoparium</i>	+	+	+
<i>Leucopogon fasciculatus</i>	+		+
<i>Ligustrum lucidum*</i>	+	+	+
<i>Ligustrum sinensis*</i>		+	
<i>Lobelia anceps</i>			+
<i>Lobelia angulata</i>			+
<i>Lonicera japonica*</i>	+	+	
<i>Lophomyrtus bullata</i>	+	+	+
<i>Melicope simplex</i>	+	+	
<i>Melicytus macrophyllus</i>			+
<i>Melicytus micranthus</i>	+	+	
<i>Melicytus ramiflorus</i>	+	+	+
<i>Melissa officinalis*</i>		+	
<i>Metrosideros diffusa</i>	+	+	+
<i>Metrosideros fulgens</i>	+	+	
<i>Metrosideros perforata</i>	+	+	+
<i>Myrsine australis</i>	+	+	+
<i>Myrsine salicina</i>	+	+	+
<i>Nertera dichondrifolia</i>	+	+	+
<i>Nertera aff. villosa</i>			+
<i>Nestegis cunninghamii</i>			+
<i>Nestegis lanceolata</i>	+	+	
<i>Nestegis montana</i>		+	
<i>Olearia furfuracea</i>	+	+	+
<i>Olearia rani</i>	+	+	+
<i>Oxalis exilis</i>		+	
<i>Parahebe</i> sp. (see <i>Veronica</i>)			
<i>Parsonsia heterophylla</i>	+	+	+
<i>Passiflora tetrandra</i>	+	+	
<i>Pittosporum tenuifolium</i>	+	+	+
<i>Pomaderris amoena</i>	+	+	
<i>Pomaderris kumeraho</i>	+	+	+
<i>Prunella vulgaris*</i>		+	
<i>Pseudopanax crassifolius</i>	+	+	+
<i>Ranunculus reflexus</i>	+	+	
<i>Ranunculus repens*</i>		+	
<i>Raukaua anomalus</i>		+	
<i>Rhabdothamnus solandri</i>	+	+	
<i>Rubus australis</i>	+	+	+
<i>Rubus cissoides</i>	+	+	+
<i>Rubus fruticosus</i> agg.*	+	+	
<i>Schefflera digitata</i>	+	+	+

<i>Streblus heterophyllus</i>	+	+	+
<i>Toronia toru</i>	+	+	
<i>Trifolium</i> sp.*		+	
<i>Ulex europaeus</i> *	+	+	+
<i>Veronica jovellanoides</i>			+
<i>Vitex lucens</i>	+	+	

Monocotyledons

<i>Acianthus sinclairii</i>	+	+	+
<i>Aponogeton distachyus</i> *	+	+	
<i>Astelia ? grandis</i>	+	+	
<i>Astelia trinervia</i>	+	+	+
<i>Baumea tenax</i>			+
<i>Carex lambertiana</i>			+
<i>Carex lessoniana</i>	+	+	+
<i>Carex longebrachiata</i> *			+
<i>Carex ochrosaccus</i>		+	
<i>Carex virgata</i>	+	+	
<i>CollospERMUM hastatum</i>	+	+	+
<i>Cordyline australis</i>	+	+	+
<i>Cordyline banksii</i>	+	+	
<i>Cortaderia fulvida</i>			+
<i>Cortaderia selloana</i> *	+	+	+
<i>Corybas cheesemanii</i>	+	+	
<i>Cyrtostylis oblonga</i>		+	
<i>Dianella nigra</i>	+	+	
<i>Diplodium alobulum</i>	+	+	
<i>Diplodium trullifolium</i>			+
<i>Drymoanthus adversus</i>			+
<i>Earina mucronata</i>	+	+	
<i>Freycinetia banksii</i>	+	+	
<i>Gahnia lacera</i>	+	+	+
<i>Gahnia pauciflora</i>			+
<i>Gahnia setifolia</i>			
<i>Gahnia xanthocarpa</i>	+	+	+
<i>Isolepis reticularis</i>		+	+
<i>Juncus effusus</i> *		+	
<i>Juncus planifolius</i>			+
<i>Lachnagrostis lyallii</i>			+
<i>Lemna minor</i>	+	+	+
<i>Libertia micrantha</i>		+	
<i>Luzula picta</i> var. <i>picta</i>			+
<i>Microlaena avenacea</i>	+	+	+
<i>Microlaena stipoides</i>		+	
<i>Nematoceras trilobum</i>	+		
<i>Oplismenus hirtellus</i>	+	+	+
<i>Phormium tenax</i>	+	+	+
<i>Poa anceps</i>	+	+	
<i>Rhopalostylis sapida</i>	+	+	+
<i>Ripogonum scandens</i>	+	+	+
<i>Schoenus maschalinus</i>			
<i>Schoenus tendo</i>	+	+	+

<i>Tradescantia fluminensis*</i>	+	+	+
<i>Uncinia banksii</i>	+	+	+
<i>Uncinia distans</i>		+	
<i>Uncinia uncinata</i>	+	+	+
<i>Uncinia zotovii</i>			+
<i>Wolffia australiana</i>	+		+

Liverworts & Mosses

<i>Achrophyllum dentatum</i>			+
<i>Balantiopsis diplophylla</i>			+
<i>Bazzania adnexa</i>			+
<i>Bazzania novae-zelandiae</i>			+
<i>Camptochaete arbuscula</i>		+	+
<i>Chiloscyphus lentus</i>			+
<i>Dicranoloma billardierei</i>		+	+
<i>Dicranoloma menziesii</i>		+	+
<i>Fissidens waiensis</i>			+
<i>Heteroscyphus cunestipulis</i>			+
<i>Hypnodendron</i> sp.		+	
<i>Hypogymnia subphysodes</i>			+
<i>Leiomitria lanata</i>			+
<i>Lejeunea flava</i>			+
<i>Lembidium nutans</i>			+
<i>Leucobryum candidum</i>		+	+
<i>Monoclea forsteri</i>		+	+
<i>Paracromastigium furcifolium</i>			+
<i>Pendulothecium auriculatum</i>			+
<i>Ptychomnion aciculare</i>		+	+
<i>Pyrrhobryum bifarium</i>			+
<i>Trichocolea mollisima</i>			+
<i>Trichocolea rigida</i>			+

Lichens

<i>Pseudocyphellaria carpoloma</i>			+
<i>Pseudocyphellaria dissimilis</i>			+
<i>Pseudocyphellaria durietzii</i>			+
<i>Pseudocyphellaria multifida</i>			+
<i>Sticta filix</i>			+
<i>Sticta lacera</i>			+
<i>Usnea angulata</i>			+