

## THE INDIGENOUS FLORA OF THE TE KAURI SCENIC RESERVE KAWHIA (TAIUI ECOLOGICAL DISTRICT)

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### INTRODUCTION

The prime reason for this "pseudo paper" is to provide an updated version with corrected identification and other errors of the checklist I prepared for the DSIR Botany Division in the summer of 1983 (see King et al. 1983). Furthermore, it is to correct the shameful lack of a published checklist for a reserve considered the home territory of the Hamilton Junior Naturalist Club (now 25 years old).

At least eight checklists have been prepared before I began my work, and most of these have been lost or remained unpublished. Consequently it was found necessary to resurvey the reserve for the DSIR during the South Auckland Scenic Reserves Survey scheme.

Since the publication of that checklist (King et al. 1983) I have maintained a system of updating it to the point where new additions are now very rare.

### THE RESERVE

Te Kauri Scenic Reserve (900Ha) occupies a central position on the main Otorohanga-Kawhia highway. It was originally set "aside as Scenery" but after the Hamilton Junior Naturalists Club established themselves in the area further additions were made. The reserve also protects five stream catchments, namely Okupata, Waikuku, Wairakanui, Te Koura, Maturangi and numerous tributaries in a Karst landscape prone to slipping (King et al.)

The prime rocktypes comprise Aotea Sandstone massifs of the Te Kuiti group (Kear & Schofield, 1959) grading from massive muddy members to glauconitic bedded units bordering limestones. The topography of the reserve is rugged, dissected by deep gorges, dolines and other Karst features. Residual caves are frequent and the theory of the valleys and gorges forming from cave subsidence is very likely.

The Sandstone beds are mantled in a mixture of ashes best referred to the "Mairoa Ashes" and "Hamilton Ashes". An area of distil-welded Oparau ignimbrite is reported by Marshall & Buck (1978) but the author has not noted this.

Soils comprise Yellow Brown loams and skeletal soils of steep hillsides (King et al).

The reserve's vegetation is best described as a rich mosaic of climax and seral types, the reserve having been extensively milled, burnt and even farmed.

Patches of kauri forest still occur in the southern parts of the reserve and a single area of kawaka is known. Otherwise a mosaic of tawa-kamahi forest; tawa/kamahi tawa/hinau; (rimu)/tawa-pukatea; tanekaha; tanekaha-kamahi; tanekaha-kamahi-kauri; kamahi; rewarewa-kamahi; kamahi-tanekaha and manuka scrubland are important (King et al).

The complexity of the forest types results in a rich diversity of plant species reflected in the checklist.

## CHECKLIST

At present the checklist contains 350 species even with the removal of species reported in King et al from the area designated reserve (Kaitaringa Farms Ltd.) but since felled.

Some important plant distribution records occur within the reserve namely the presence of the northern species, Agathis australis, Pomaderris kumeraho, Phebalium nudum, Coprosma arborea, C. spathulata, Dracophyllum sinclairii and Toronia toru, the presence of southern species and upland montane species not normally found at such low altitudes (c. 250 ) Rytidosperma buchananii, Ixerba brexioides, Pseudowintera axillaris, Hebe macrocarpa var. corriganii and Quintinnia serrata, plus the presence of rare, endangered and regionally uncommon plants (Given 1981, Given et al 1984), e.g. Marattia salicina, Metrosideros carminea, Libocedrus plumosa, Etelea arborescens, Ophioglossum petiolatum, Bulbophyllum tuberculatum, Dactyloctenium aegyptium, Illeostylis micranthus, Gratiola sexdentata, Pimelea tomentosa, Psudopanax laetus, Lindsaea viridis and Prasophyllum pumilum.

Problems with adventive native species in the reserve are now occurring. Extensive native plantings were made around Te Kauri lodge by Reg Bell, Fred Corlett and Jeremy Rolfe. Some of these collections have since escaped. The large vine Tecomanthe speciosa has spread through a small area of the reserve but no seedlings have been seen -- despite fertile fruits. Hibiscus trionum has colonised several areas and Hebe bollonsii x H. albicans has been recently collected in bush near the lodge. Hebe salicifolia is established on the reserve boundary.

Some possible extinctions have also occurred within the reserve. Pimelea tomentosa has not been reported since 1981, Illeostylis micranthus since 1982 and Lindsaea viridis since 1983. Most extinctions are due to serious opossum and goat browse but some like Pimelea tomentosa are due to over collecting by people. Gastrodia cunninghamii and Prasophyllum pumilum have recently been relocated.

## DOUBTFUL OR ERRONEOUS RECORDS

Over the last 25 years a number of interesting records have accumulated -- many have proved correct over time but the following are unsubstantiated or based on misidentifications.

Record	Observed or noted by	Identity	Corrected
<u>Botrychium australe</u>	Nicholls	<u>B. biforme</u>	deLange
<u>Hymenophyllum armstrongii</u>	unknown	<u>H. revolutum</u>	deLange
<u>Trichomanes strictum</u>	unknown	?	
<u>Thelymitra hatchii</u>	deLange	<u>T. longifolia</u> (form)	Druce
<u>Meliccytus macrophyllus</u>	deLange	<u>M. ramiflorus</u> ssp. <u>ramiflorus</u>	deLange
<u>Microtis parviflora</u>	Parkinson	<u>Microtis uniflora</u>	Parkinson
<u>Pterostylis australis</u>	Smart	<u>P. banksii</u>	deLange
<u>Metrosideros umbellata</u>	Vail,		
	Deverson, Kendrick	<u>M. robusta</u>	deLange
<u>Hymenophyllum atrovirens</u>	Rolfe	<u>H. sanguinolentum</u>	deLange

## CONCLUSIONS

Te Kauri S.R. (900 Ha) contains a rich diversity of vascular plant species. The updated checklist at present contains 350 species and hybrids. Some of these are at or near their southern or northern distribution limits, others below their usual altitudinal range and others entirely new records for the Tainui Ecological district (e.g. Toronia toru).

Besides this the reserve contains very large populations of Metrosideros carminea still considered a threatened species in Given et al. (1984) and smaller (but stable) ones of king fern Marattia salicina (a vulnerable species, Given et al.). It also contains N.Z.'s only reserved colony of the endangered fern Ophioglossum petiolatum.

## REFERENCES

- Given, D.R. 1981 Rare and Endangered Plants of New Zealand. Reed.  
 Given, D.R., Sykes, W.R., Williams, P.A. 1984. Threatened Plants of N.Z. (Draft 4 Revised Checklist). DSIR, Botany Division.  
 Kear, D., Schofield, J.C. Te Kuiti Group 1959. N.Z. J. Geol. & Geophysics 2: 685-717.  
 King, D.R., deLange, P.J., Compton, M. 1983. Te Kauri Scenic Reserve. DSIR, Botany Division, Rotorua.  
 Marshall, T.W., Buck, M. 1978. N.Z. Land Resource Inventory N73. Water & Soil Div. M.W.D.

## THE LIST

Based on Te Kauri Scenic Reserve DSIR Report (King et al. 1983).  
 Revised July 1984, August 1984, December 1984, January 1985.

+ = uncommon or local.

Vouchers of some records are lodged in WAI, CHR and AK Herbaria.

Gymnosperms

Agathis australis +	Podocarpus cunninghamii
Dacrycarpus dacrydioides	P. totara +
Dacrydium cupressinum	Prumnopitys ferruginea
Libocedrus plumosa +	P. taxifolia +
Phyllocladus trichomanoides var. trichomanoides	

Dicot trees & shrubs

Alectryon excelsus var. excelsus	C. robusta
Alseuosmia macrophylla	C. spathulata +
Aristotelia serrata	C. tenuicaulis
Beilschmiedia tawa	C. propinqua x C. robusta
Brachyglottis sp. (a)	Coriaria arborea
(Urostemon kirkii)	Corynocarpus laevigatus +
B. repanda var. repanda	Dodonaea viscosa
Carmichaelia aligera	Dracophyllum sinclairii +
(incl. C. cunninghamii)	Dysoxylum spectabile
Coprosma arborea +	Elaeocarpus dentatus
C. areolata +	Entelea arborescens +
C. grandifolia	Fuchsia excorticata +
C. lucida	Gaultheria antipoda
C. propinqua +	Geniostoma rupestre var. crassum
C. rhamnoides	Griselinia lucida

*Hebe macrocarpa* ssp. *corriganii* +  
*H. macrocarpa* ssp. *macrocarpa* +  
*H. stricta* var. *stricta* (incl.  
*stricta* var. ? limestone form)  
*H. stricta* var. *stricta* x *stricta*  
var. *macoura* +  
*Hedycarya arborea*  
*Hoheria populnea* var. *lanceolata*  
(incl. *H. sexstylosa*)  
*Ileostylus micranthus* +  
*Ixerba brexioides* +  
*Knightia excelsa*  
*Kunzea ericoides* var. *ericoides*  
*Laurelia novae-zelandiae*  
*Leptospermum scoparium*  
*Leucopogon fasciculata*  
*L. fraseri*  
*Litsea calicularis*  
*Lophomyrtus bullata*  
*Macropiper excelsum* var. *excelsum*  
*Melicope ternata* +  
*Melicytus lanceolatus* +  
*M. ramiflorus* ssp. *ramiflorus*  
*Metrosideros robusta* +  
*Mida salicifolia* +  
*Myrsine australis*  
*M. salicina*  
*Nestegis cunninghamii* +

Monocot trees and shrubs

*Cordyline australis* +  
*C. banksii*

Dicot lianes

*Calystegia sepium* agg. +  
*C. tuguriorum* +  
*Clematis foetida* +  
*C. forsteri* +  
*C. paniculata*  
*Fuchsia perscandens* +  
*F. excorticata* x *F. perscandens*  
(F. x *colensoi*) +  
*Metrosideros carminea* (AK 168093,  
168099, 168100)

Monocot lianes

*Freycinetia baueriana* ssp. *banksii* *Ripogonum scandens*

Psilopsids & lycopods

*Lycopodium cernuum* + (WAI 3416)  
*L. deuterodensum*  
*L. scariosum* +  
*L. varium* (incl. *billardieri*,  
*novae-zelandicum*)

*N. lanceolata*  
*N. montana*  
*Olearia rani*  
*Paratrophis microphylla* +  
*Pennantia corymbosa* +  
*Phebalium nudum* +  
*Pimelea tomentosa* +  
*Pittosporum cornifolium*  
*P. eugenoides* +  
*P. tenuifolium* ssp. *huttonianum*  
*P. tenuifolium* ssp. *tenuifolium* +  
*Pomaderris ericifolia* +  
*P. kumeraho* +  
*Pseudopanax arboreus* var. *arboreus*  
*P. crassifolius*  
*P. laetus* +  
*Pseudowintera axillaris* +  
*Quintinia serrata* (incl. *elliptica*,  
*acutifolia*)  
*Rhabdothamnus solandri*  
*Schefflera digitata*  
*Solanum aviculare* (incl.  
*S. aviculare* var. *albiflora*)  
*Syzygium maire* +  
*Toronia toru* +  
*Vitex lucens* +  
*Weimannia racemosa* var. *racemosa*

*C. pumilio* +  
*Rhopalostylis sapida*

*M. colensoi*  
*M. diffusa*  
*M. fulgens*  
*M. perforata*  
*Muehlenbeckia australis*  
*Rubus cissoides* var. *cissoides*  
*R. australis*  
*R. schmidelioides* var.  
*schmidelioides*

*L. volubile*  
*Tmesipteris elongata* (incl.  
*T. elongata* ssp. *robusta*)  
*T. lanceolata*  
*T. tannensis*

Ferns

- Adiantum cunninghamii*  
*A. fulvum* +  
*A. viridescens*  
*A. hispidulum* +  
*Alsophila cunninghamii*  
*A. smithii*  
*A. tricolor*  
*Anarthropteris lanceolata*  
*Asplenium bulbiferum* s.s.  
*A. flaccidum* ssp. *flaccidum*  
*A. gracillimum* +  
*A. hookerianum* +  
*A. lamprophyllum*  
*A. oblongifolium*  
*A. polyodon*  
*A. oblongifolium* x *A. flaccidum*  
     ssp. *flaccidum* +  
*A. bulbiferum* s.s. x *A. flaccidum*  
     ssp. *flaccidum*  
*A. bulbiferum* s.s. x *A.*  
     *hookerianum* +  
*A. flaccidum* ssp. *flaccidum* x *A.*  
     *hookerianum* +  
*Azolla filiculoides*  
*Blechnum chambersii*  
*B. colensoi*  
*B. discolor*  
*B. filiforme*  
*B. fluviatile*  
  
*B. fraseri* +  
*B. membranaceum*  
*B. minus*  
*B. nigrum* +  
*B. sp.* (*B. capense* sensu Allan  
     1961)  
*Botrychium biforme* +  
*Cardiomanes reniforme*  
*Ctenopteris heterophylla*  
*Deparia petersenii* ssp. *congrua*  
     (incl. *D. tenuifolia*)  
*Dicksonia fibrosa* +  
*D. squarrosa*  
*Diplazium australe*  
*Doodia media* ssp. *australis* +  
*Gleichenia microphylla* +  
*Grammitis billardieri* +  
*G. ciliata*  
*G. pseudociliata* +  
  
Dicot composite herbs  
*Gnaphalium audax* s.s.  
*G. gymnocephalum*  
*G. involucreatum*  
*G. kerianse*  
*G. limosum*
- Hymenophyllum demissum*  
*H. dilatatum*  
*H. ferrugineum*  
*H. flabellatum*  
*H. flexuosum* +  
*H. multifidum*  
*H. rarum*  
*H. revolutum*  
*H. sanguinolentum* agg. (widespread  
     lowland form)  
*H. scabrum* +  
*Hypolepis ambigua*  
*H. distans*  
*H. lactea* + (AK 168118)  
*H. rufobarbata* +  
*Lastreopsis glabella*  
*L. microsora* ssp. *pentangularis* +  
*L. hispida*  
*Leptopteris hymenophylloides*  
*Lindsaea linearis* +  
*L. trichomanoides* (incl. *L.*  
     *trichomanoides* var. *lessonii*)  
*L. viridis* +  
*Lygodium articulatum*  
*Marattia salicina* +  
*Ophioglossum coriaceum* + (WAI 5434)  
*O. petiolatum* (27 plants found under  
     kahikatea)  
*Paesia scaberula*  
*Pellaea falcata* + (WAI 3417)  
*Phymatosorus diversifolius*  
*P. scandens*  
*Pneumatopteris pennigera*  
*Polystichum richardii*  
*P. silvaticum* +  
*Pteridium esculentum*  
*Pteris macilenta*  
*P. tremula*  
*Pyrrosia serpens*  
*Rumohra adiantiformis*  
*Schizaea fistulosa* +  
*Sphaeopteris medullaris*  
*Sticherus cunninghamii*  
*Trichomanes elongatum*  
*T. endlicherianum*  
*T. venosum*  
  
*G. sphaericum*  
*Lagenifera pumila*  
  
*Pseudognaphalium* sp. (*P. luteo-album*  
     agg.)

*Senecio hispidulus*  
*S. minimus*

*S. bipinnatisectus* x *hispidulus*  
*S. glomeratus* +

Dicot herbs (other than composites)

*Acaena anserinifolia*  
*A. novae-zelandiae*  
*Cardamine corymbosa*  
*C. sp. (C. debilis agg.)*  
*Centella uniflora*  
*Dactylanthus taylorii* + (WAI 5054)  
*Dichondria repens*  
*Drosera binata*  
*D. peltata* ssp. *auriculata*  
*Elatine gratiolioides*  
*Elatostema rugosum*  
*Epilobium chionanthum*  
*E. nerterioides*  
*E. nummularifolium*  
*E. palladiflorum* +  
*E. pedunculare*  
*E. pubens*  
*E. rotundifolium*  
*Galium propinquum*  
*G. sp. (?tenuicaule)*  
*Geranium potentillioides* var.  
     *potentillioides*  
*Gonocarpus aggregatus* +  
*G. sp. cf. aggregatus* - *montanus*  
*Gratiola sexdentata* +

*Hydrocotyle dissecta* (CHR 415474)  
*H. elongata*  
*H. heteromeria* (CHR 415485)  
*H. microphylla*  
*H. sp. (moschata agg., leaves hairy*  
     *on both sides)* + (CHR 415475)  
*H. sp. (moschata agg., leaves hairy*  
     *on surface only)* +  
*H. novae-zelandiae* agg. +  
*Hypericum japonicum*  
*Lobelia anceps* +  
*Nertera depressa*  
*N. dichondrifolia*  
*N. sp. unnamed aff dichondrifolia*  
*Oxalis exilis*  
*O. lactea*  
*Peperomea urvilleana*  
*Pratia angulata*  
*P. perspusilla* +  
*Ranunculus hirtus*  
*R. rivularis* +  
*S. decipens* (incl. *minuta*, *parviflora*)  
*Wahlenbergia gracilis*

Monocot grasses & sedges

*Baumea rubiginosa*  
*Carex dissita*  
*C. geminata* agg (wide leaves,  
     mostly 2-2.5 cm wide)  
*C. lambertiana*  
*C. lessoniana*  
*C. maorica*  
*C. secta* var. *secta* +  
*C. solandri*  
*C. virgata*  
*Cortaderia fulvida* +  
*C. splendens*  
*Ehrharta diplax* var. *diplax*  
*E. stipoides*  
*Eleocharis acuta*  
*E. gracilis*  
*Isolepis sp. (sulcatus* var.  
     *distigmatosus)*  
*I. inundatus*  
*I. prolifer*  
*I. nodosus*  
*I. reticularis*

*Gahnia lacera*  
*G. pauciflora*  
*G. setifolia*  
*G. xanthocarpa* +  
*Machaerina sinclairi*  
*Morelotia affinis*  
*Oplismenus imbecillus* ssp. *hirtellus*  
*Poa anceps* var. *anceps*  
*Rytidosperma buchananii* +  
*R. gracilis* +  
*R. unarede*  
*R. sp. hairy stems* +  
*Schoenus maschalinus*  
*S. tendo*  
*Uncinia banksii*  
*U. distans*  
*U. ferruginea*  
*U. gracilentata* +  
*U. laxiflora* +  
*U. uncinata*  
*U. zotovii*