SOME BOTANICAL NOTES ON LAKE OTOTOA, SOUTH HEAD, KAIPARA

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[This article was compiled by the editor from notes supplied by many members who were on the field trip to the bush surrounding Lake Ototoa on 14 April. A copy has been sent to Lands & Survey Department to assist with the drafting of a management plan for the Water Catchment Reserve.]

1. Records of plant species from the lists of Knowles & Town, Esler 1982 and Burns 1984. Species marked + were also noted by ABS members; species marked * are new records from the April 1984 field trip.

FERNS & FERN ALLIES

Adiantum aethiopicum +
A. cunninghamii +
A. fulvum +
A. hispidulum +
A. viridescens *
Anarthropteris lanceolatus +
Arthropteris tenella +
Asplenium bulbiferum ssp. gracillimum +
A. flaccidum ssp. flaccidum +
Asplenium hookerianum *
A. oblongifolium +
A. polyodon *
Azolla rubra
Blechnum capense +
B. chambersii *
B. filiforme +
B. fraseri
B. membranaceum +
Cyathea dealbata +
C. cunninghamii
C. medullaris +
Dicksonia squarrosa +
Doodia media +
Gleichenia circinata
G. microphylla
Grammitis billardieri +
Histiopteris incisa *
Hymenophyllum demissum
H. flexuosum +
H. sanguinolentum *
Hypolepis tenuifolium +
Lastreopsis glabella +
L. hispida +
L. microsora +
L. velutina *
Lindsaea trichomanoides
Lycopodium billardieri
L. deuterodensum +
L. volubile +
Lygodium articulatum
Marattia salicina *
Paesia scaberula +
Phymatosorus diversifolius +
P. scandens +
Pneumatopteris pennigera +
Polystichum richardii +
Pteridium acquilinum var. esculentum +
Pteris macilenta +
P. tremula +
Pyrrosia serpens +
Rumohra adiantiformis
Tmesipteris lanceolata *
T. tannensis +
Trichomanes endlicherianum *

GYMNOSPERMS

Agathis australis
Dacrydium cupressinum +
Phyllocladus trichomanoides
Podocarpus dacrydioides +
P. ferrugineus +
P. hallii
P. spicatus +
P. totara +

DICOT TREES, SHRUBS AND CLIMBERS

Alectryon excelsus +
Alseuosmia macrophylla
Beilschmiedia tarairi +
B. tawa +
Brachyglottis repanda +
Calystegia sepium +
C. tugoriorum
Carmichaelia aligera +
Carpodetus serratus +
Clematis paniculata
C. forsteri +
C. parviflora +
Coprosma arborea +
C. areolata

C. lucida +
C. macrocarpa
C. rhamnoides +
C. robusta +
C. robusta x C. propinqua
C. spathulata *
Corokia buddleioides
Coryocarpus laevigatus +
Cyathodes fasciculata +
C. juniperina
Dracophyllum latifolium
Dysoxylum spectabile +
Elaeocarpus dentatus
Entelea arborescens *
Eupatorium adenophorum *
Fuchsia excorticata
Geniostoma ligustrifolium +
Gaultheria antipoda +
Griselinia lucida
Hebe stricta +
Hedycarya arborea +
Hoheria populnea
Knightia excelsa +
Laurelia novae-zelandiae +
Leptospermum ericoides +
L. scoparium +
Litsea calicaris +
Lophomyrtus obcordata +
Lupinus arboreus
Macropiper excelsum +
Melicope ternata +
Melicytus macrophyllus
M. ramiflorus +
Metrosideros diffusa *
M. fulgens +
M. perforata +
Mida salicifolia
Muehlenbeckia complexa +
Myrsine australis +
Nestegis lanceolata +
N. montana +
Olearia furfuracea +
O. rani +
Parsonsia heterophylla +
P. capsularis
Passiflora tetrandra +
Phebalium nudum +
Pittosporum cornifolium +
P. eugenioides
P. tenuifolium +
Plagianthus divaricatus
Pomaderris kumeraho
P. phylicifolia +
Pseudopanax arboreus
P. crassifolius +
P. lessonii
Rhabdothamnus solandri +
Rubus australis *
R. cissoides +
Schefflera digitata
Solanum mauritianum *
Sophora microphylla +
Streblus heterophylla +
Syzygium maire
Toronia toru
Vitex lucens +
Weinmannia silvicola *

DICOT HERBS

Acaena anserinifolia
A. novae-zelandiae +
Alternathera denticulata +
Anagallis arvensis +
Aster subulatus +
Callitriche muelleri +
Cardamine debilis
Centella uniflora +
Centipeda orbicularis *
Cirsium vulgare +
Cotula coronopifolia +
Crepis capillaris
Drosera auriculata
Dichondra repens *
Elatostema rugosa
Epilobium pallidiflorum *
Erigeron floribundus +
Galium aparine *
G. propinquum +
Glossostigma elatinoides +
Gnaphalium candidissimum
G. gymnocephalum
G. involucratum *
G. luteo-album +
G. spicatum +
Haloragis erecta +
H. incana +
Hydrocotyle elongata +
H. novae-zelandiae var. (H. "ototoa") +
H. novae-zelandiae
Hypericum japonicum *
Lagenifera pumila
L. stipitata +
Leontodon taraxacoides +
Linum bienne
Limosella lineata +
Lobelia anceps +
Lotus pedunculatus +
Ludwigia palustris +
Myriophyllum propinquum +
M. triphyllum
M. votchii *
Nasturtium officinale +
Nertera dichondraefolia +
Oxalis exilis
O. perennans
Pastinaca sativa *
Pelargonium inodorum
Peperomia urvilleanum +
Physalis peruviana +
Phytolacca octandra +

Polygonum decipiens +
P. sp. ?hydropiper *
Prunella vulgaris +
Ranunculus hirtus
R. sardous
Sagina procumbens
Senecio bipinnatisectus +
S. glomeratus
S. hispidulus
S. jacobaea +
S. minimus +
Siegesbeckia orientalis *
Solanum aviculare +
S. nodiflorum +
Sonchus oleraceus +
Stellaria media *
Wahlenbergia gracilis +

GRASSES

Aira caryophylla
Anthoxanthum odoratum
Bromus diandrus
B. unioloides
Cortaderia fulvida +
C. splendens +
C. jubata
Dichelachne crinata
Festuca arundinacea
Isachne globose +
Lolium perenne
Microlaena avenacea +
M. polynoda *
M. stipoides +
Oplismenus imbecillus +
Paspalum dilatatum
Pennisetum clandestinum
Polypogon monspeliensis
Poa anceps
P. seticulmis
Rytidosperma gracile
R. racemosa
R. unarede
Stenotaphrum secundatum
Sporobolus capensis *

ORCHIDS

Acianthus fornicatus +
Corybas orbiculatus
C. trilobus
Dendrobium cunninghamii +
Earina mucronata +
Microtis unifolia +
Pterostylis banksii
Thelymitra longifolia

OTHER MONOCOTS

Aristea ecklonii +
Astelia solandri +
A. trinervia +
Baumea articulata +
B. juncea +
Carex breviculmis
C. dissita
C. flagellifera
C. lambertiana
C. maorica
C. secta
C. spinirostris *
C. testacea
C. virgata +
Collospermum hastatum +
Cordyline australis +
C. banksii +
C. pumilio
Cyperus ustulatus +
Dianella nigra +
Elaeocharis acuta
E. spaceolata +
Freycinetia banksii +
Gahnia lacera +
Juncus articulatus
J. bufonius +
J. caespitius +
J. effusus
J. gregiflorus *
J. planifolius +
J. usitatus
Lepidosperma australe +
L. laterale +
Leptocarpus similis +
Libertia grandiflora +
L. ixioides +
Machaerina sinclairii
Morelotia affinis
Ottelia ovalifolia
Phormium tenax +
Rhopalostylis sapida +
Ripogonum scandens +
Schoenus maschalinus +
S. nitens
S. tendo
Scirpus cernuum*
S. chlorostachyus
S. inundatus *

S. lacustris +
S. nodosus
S. prolifer
Triglochin striatum
Typha orientalis +
Uncinia banksii +
U. uncinata +
Zantedeschia aethiopica

This brings the total number of native species recorded for the area to about 260.

2. Some vegetation types identified were: predominantly coastal forest of karaka and puriri with some taraire in the lower wetter spots, and quite a lot of silver ponga on the drier slopes; dry ridge environment dominated by kanuka with little regeneration; steep slopes with medium-sized kanuka, with tangled vines of supplejack and *Parsonsia* in abundance; delightful glades of large to very large titoki, mixed with big puriri and karaka; large pukatea and tawa in one valley.

3. Significant weed species noted were:

Eupatorium adenophorum
Aristea ecklonii
Solanum mauritianum.

4. Evidence of deer by tracks and hoof marks, droppings and browsing, particularly on *Geniostoma ligustrifolium*, *Coprosma*, *Macropiper excelsum* and *Carmichaelia* was noted. A few areas were completely devoid of undergrowth, others covered by bush rice grass (*Microlaena avenacea*) & others were marked by a growing predominance of nikau that alone has survived long term intensive browsing.

A little possum damage was seen, some thinning of the canopy of puriri and karaka, and rather few seeds of karaka, which should have been thick on the ground at this time of the year; and some limited damage by pig rootings.

5. Some fungi noted included:
(too early in the season for a comprehensive list.)

?Armillaria	bootlaces on karaka
Auricularia polytricha	on karaka
Bertrandia astatogala	
Calvatia	large pinkish-fawn smooth skinned puffball
Coprinus	ink caps on karaka
Daldinia	charcoal fungus
Favolaschia calocera	common
Pseudocoprinus disseminatus	
?Lentinus	pleurotoid white on kanuka
Stereum fasciatum	

A list of mosses has been prepared. (See p.30)

6. A good colony of giraffe beetle and a green gecko, tuis and dabchick were seen. Members were less enthusiastic to observe a possum (at midday), one very large black pig, 5 deer and a gate open to a neighbouring paddock.

These observations lead readily to the conclusions:

1. That since this is the last remnant of native bush on the South Head peninsula, with an unusually diverse flora, it should be preserved as far as possible in a natural state. The bulldozed areas should not be planted; the seed from surrounding tea tree will restore this area more quickly than any planting programme. Natural regeneration will

avoid introducing any foreign genetic material into this important area. Management efforts could be better spent on weed control; *Eupatorium adenophorum* (see map for location) could be removed while still at a manageable level.

2. That perhaps the most interesting part of the reserve, botannically, is the lake edge, where *Limosella lineata, Glossostigma elatinoides, Myriophyllum votchii, M. propinquum* and *Centipeda orbicularis* etc grow. The preseverv̈ation of this plant community doubtless depends on the catchment area of bush, from shore to ridge, being left undisturbed. Pines should be left, unless they can be removed without damaging the bush, without causing silting.

3. That the area is not large and total removal of wild deer should be easily accomplished. Much of the perimeter fencing is good but surveillance would be necessary to detect breaks from fallen trees. But little could be achieved if the local farmers are to use the reserve for winter grazing, or in times of drought.

Wild pigs should be removed from the reserve, particularly as *Marattia salicina* occurs there, a fern rated by Given 1981 as vulnerable since "rooting out by pigs, and its value as a garden plant have conspired to deplete it so that it is now absent from many localities where it formerly grew".

The need for possum control may become more apparent after deer and pigs have been removed.

REFERENCES

Knowles, Greg, and Town, Fiona. MS Species list of Lake Ototoa S.R.

Esler, A.E. 1982. "

Burns, Bruce. 1984. "

Given, David R. 1981. Rare and Endangered Plants of New Zealand, Reed.