

WANGANUI PLANT LIST 2

Vascular plants for Whitiāu Scientific Reserve, covering 250 ha of dunes, northwest of Whangaehu River Mouth, Foxton Ecological District.

Department of Conservation, Wanganui

C C Ogle - based on many visits from 24.4.88

Last additions 18.6.99, 18.1.00 (J Campbell), 9.3.00 (with K. Beautrais), 10.10.02;

with G Jane 1.3.05; with pink ragwort team 27.7.06, 23.8.06, 12.10.06, 12.10.07, 2.11.11

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Vegetation Types		
Foredunes:		spinifex – marram – (pingao) : grassland, with occasional sand pimelea, sand convolvulus, sand coprosma.
Hind-dunes:		(lupin) ¹ / <u>marram</u> : shrub grassland, with occasional pampas, sand coprosma, tauhinu, sand pimelea.
Dune Flats:		
	(a)	Jointed wire-rush – (club sedge) / ripgut brome : rushland, with occasional cabbage tree, toetoe, pampas, boxthorn ² and patches of sand iris, sand willow-herb. Local unusual occurrences of “forest ferns” (e.g. ponga, wheki, maidenhair) among rushes.
	(b)	Pasture of exotic grasses and clovers.
	(c)	[<i>Olearia solandri</i>] – [manuka] – [cabbage tree] – (flax) – (toetoe) / tall fescue : shrub – grassland (near Whangaehu River).
	(d)	Halfstar – <i>Gunnera</i> – <i>Schoenus nitens</i> : herbfield, with Yorkshire fog, hawkbit, <i>Sebaea</i> . (See Ogle 1989)
	(e)	(manuka) – [toetoe] / <u>rats tail</u> – (club sedge) / <i>Leucopogon fraseri</i> : shrub grassland on ablated mudstone pavements with thin sand cover.
Salt Marsh (near Whangaehu River):		Zones variously dominated by jointed wire-rush, or sea rush, or three-square, or mat-forming halophytes (half star, sea primrose, glasswort etc).
Conglomerate and mudstone outcrops:		
	(a)	Ngaio – karaka / kawakawa: “forest”.
	(b)	Jointed wire-rush/ sea primrose – halfstar – allseed: herbfield, with occasional sand buttercup, clovers, annual grasses.
	(c)	<u>bracken</u> – (coastal flax) – (toetoe) – [<i>Olearia solandri</i>]: fernland.
Riverbank:		<u>Crack willow</u> / exotic grasses – water celery with occasional ferns, patches of <i>Carex lessoniana</i> and <i>Schoenoplectus tabernaemontani</i> : treeland (Notable presence of up-river species such as wharariki, tuhara, cliff toetoe, <i>Senecio rufiglandulosus</i> , cliff kiokio and other ferns).

Threatened species in de Lange *et al.* (2009): **NATIONALLY CRITICAL** *Sebaea ovata*; **NATIONALLY ENDANGERED** *Isolepis basilaris* **NATIONALLY VULNERABLE** *Libertia peregrinans*; *Mazus novaezeelandiae* ssp. *impolitus*; *Pimelea villosa* ssp. *arenaria*; **DECLINING** *Carex litorosa*; *Coprosma acerosa*; *Gunnera arenaria*; *Selliera rotundifolia* **RELICT** *Ficinia spiralis*. This is also the only known site in NZ for the *Coprosma* hybrid, *C. acerosa* x *C. propinqua*.

¹ Most lupins were dead by 1989; many young shrubs flowering in December 1992.

² Pampas and boxthorn were cut and poisoned mid-1989, over the entire reserve, with continued control in subsequent years.

CHR, WELT = specimen collected in this area for herbaria at Landcare Research NZ, Lincoln, and Te Papa, respectively.

Abundance Ratings

a = abundant

c = common

o = occasional

u = uncommon

l = local (species in small area, but can be common or abundant there)

* = adventive species to this district

(x) = extinct (known previously at Whitiāu)

<u>Latin name</u>	<u>Common name</u>	<u>Abundance</u>
<u>Gymnosperm tree</u>		
* Cupressus macrocarpa	macrocarpa	u (seedlings)
* Pinus radiata	radiata pine	o (seedlings & poles)
<u>Dicot trees, shrubs and lianes</u>		
* Acacia dealbata ³ CHR	(silver wattle)	u(1)
* Acacia sophorae (seedlings to CHR)	(sand wattle)	o-lc
* Artemisia arborescens CHR	(hedge cerose a)	u (planted?)
* Berberis glaucophyllus CHR	(barbery)	u ⁴
Brachyglottis repanda	(rangiora)	u
* Calystegia silvaticum CHR	(convolvulus)	u
Calystegia soldanella	(sand convolvulus)	o
Carmichaelia australis CHR462483	(native broom)	u
Clematis forsteri CHR – female fls		u
* Clematis vitalba ⁵	(old man's beard)	u
Coprosma acerosa	(sand coprosma)	a
Coprosma propinqua CHR462469		u
Coprosma robusta	(karamu)	u
Coprosma acerosa x C. propinqua CHR 462453		u
Coprosma propinqua x C. robusta		u
* Corynocarpus laevigatus	(karakā)	u
* Cytisus scoparius	(broom)	u
(x) Discaria toumatou	(matagouri)	Reported ⁶
Dodonaea viscosa	(akeake)	u
* Euonymus europaeus	spindleberry	u ⁷
Geniostoma ligustrifolium	(hangehange)	u

³ Coppicing off horizontal trunk c. 20 m from river, in flood zone near mouth (2007); seedling near same site 2011.

⁴ One 3-m shrub found 27.7.06

⁵ Found by C Edwards 29.11.89; flowering plant, eradicated; 2nd plant found 1990 and eradicated (R Halsey, pers comm.).

⁶ (C Gullery pers. comm.); Elder (1967). Probably extinct now. Reported (pers. comm. to CCO in ca. 1992 by Moore Blyth that there were thickets when his father took up the farm here in 1800s. In 2002 a specimen brought in from neighbouring farm (probably Pritchard's or Churton's) property by a member of the public. Specimen pressed by G La Cock.

⁷ 2 shrubs found 12 Oct 06, between pines and river – eradicated soon after

Latin name	Common name	Abundance
Hebe stricta var.	(koromiko)	u (1 seedling)
* Ilex aquifolium CHR	(holly)	u(1) ⁸
Kunzea aff. ericoides (prob. K. robusta)	(kanuka)	u
*Lavandula dentata CHR	(toothed lavender)	u (2) ⁹
Leptospermum scoparium	(manuka)	o
Leucopogon fraseri CHR462479	(patotara)	la
* Lupinus arboreus	(lupin)	a
* Lycium ferocissimum	(boxthorn)	o
Meliccytus ramiflorus	mahoe	u
Muehlenbeckia complexa	(pohuehue)	o
Myoporum laetum	(ngaio)	l
Myrsine australis ¹⁰ CHR	(mapou)	4
Olearia solandri	(shrub daisy)	o
Ozothamnus leptophyllus	(tauhinu)	o
Parsonsia capsularis	(NZ jasmine)	u
Pimelea villosa ssp. arenaria CHR462440	(sand daphne)	lc
Piper excelsum	(kawakawa)	u
* Rosa rubiginosa	(sweet brier)	o
* Rubus fruticosus agg. (R. ulmifolius)	(blackberry)	l
* Rumex sagittatus	(climbing dock)	u
* Salix cinerea	(grey willow)	u
* Salix fragilis	(crack willow)	l
Solanum laciniatum	(poroporo)	u
Tetragonia implexicoma	(NZ spinach)	lc
* Ulex europaeus	(gorse)	o
Monocot tree		
Cordyline australis	(ti kouka, cabbage tree)	u
Herbaceous dicots		
* Achillea millefolium	(yarrow)	u
Anaphalioides trinervis	(ever-lasting daisy)	lc
Acaena anserinifolia	(bidibidi)	o
Acaena novae-zelandiae CHR475283	(bidibidi)	o
* Amaranthus sp.	(redroot)	u
* Anagallis arvensis	(scarlet pimpernel)	o
* Anthemis cotula	stinking mayweed	u ¹¹
* Aphanes sp.	(parsley piert)	lc
* Apium nodiflorum CHR479832	(water celery)	la
* Arenaria serpyllifolia	(sandwort)	u

⁸ Specimen seen 23.8.06 (apparently known earlier to DOC staff but not added to list!)

⁹ 2 shrubs found Oct 1998, Jim Campbell.

¹⁰ 1 found by Jim Gordon, 6.8.10, then 3 more nearby by CCO.

¹¹ 1 plant on dune near *Sebaea*; eradicated 30.7.03

Latin name	Common name	Abundance
* <i>Atriplex prostrata</i>	(orache)	lc
* <i>Bellis perennis</i>	(daisy)	u
* <i>Callitriche stagnalis</i>	(starwort)	u
* <i>Centaurium erythraea</i> CHR479829	(centaury)	u
<i>Centella uniflora</i>		u
* <i>Cerastium glomeratum</i>	(mouse-eared chickweed)	o
* <i>Cirsium arvense</i>	(Californian thistle)	u
* <i>Cirsium vulgare</i>	(Scotch thistle)	u
* <i>Conium maculatum</i>	(hemlock)	lc
* <i>Conyza sumatrensis</i> (<i>C. albida</i>) CHR477742	(fleabane)	o
<i>Cotula coronopifolia</i>	(batchelor's button)	lc
* <i>Crassula decumbens</i> CHR 508083		u
<i>Crassula sieberiana</i> CHR 508084		u
* <i>Crepis capillaris</i>	(hawksbeard)	u
* <i>Daucus carota</i>	(wild carrot)	lc
* <i>Dianthus armerius</i> CHR462451	(Deptford pink)	l
<i>Epilobium billardioreanum</i> CHR462439	(sand willowherb)	lc
<i>Epilobium cinereum</i> CHR462438		u
<i>Epilobium nerteroides</i> CHR479817		u
<i>Epilobium nummulariifolium</i>	(willowherb)	u
<i>Epilobium pedunculare</i> CHR475281	(willowherb)	u
<i>Euchiton audax</i> CHR462449, 462480	(cudweed)	u
<i>Euchiton involucratus</i> (?) CHR462450	(cudweed)	u
* <i>Galium aparine</i>	(cleavers)	u
* <i>Galium divaricatum</i> CHR462482	(slender bedstraw)	lc
* <i>Galium palustre</i>	(marsh bedstraw)	u
* <i>Geranium molle</i> CHR479415	(dove's foot cranesbill)	o
* <i>Gamochaeta americana</i> CHR462477 ¹²	(cudweed)	u
* <i>Gamochaeta spicata</i> (<i>Gnaphalium coarctatum</i>)	(cudweed)	l
* <i>Gamochaeta</i> (<i>Gnaphalium</i>) <i>subfalcata</i>	(cudweed)	lc
<i>Gunnera arenaria</i> (<i>G. dentata</i> var.)	(sand gunnera)	lc ¹³
<i>Haloragis erecta</i>		u
<i>Hydrocotyle novae-zeelandiae</i>		u
* <i>Hypochoeris glabra</i> CHR479826	(smooth catsear)	u
* <i>Hypochoeris radicata</i> CHR479417	(catsear)	o
* <i>Lactuca virosa</i>	(acrid lettuce)	u
* <i>Leontodon saxatilis</i> CHR479827	(hawkbit)	c
* <i>Lepidium bonariense</i>	(Argentine cress)	u
<i>Lilaeopsis ruthiana</i> (?)	(tape-measure plant)	o
<i>Limosella lineata</i> CHR466859		l
* <i>Linum bienne</i>	(pale flax)	u
* <i>Linum catharticum</i>	(purging flax)	o
* <i>Linum trigynum</i> CHR	(yellow flax)	u
<i>Lobelia anceps</i>	(NZ lobelia)	o
<i>Lobelia angulata</i> agg.	'pratia'	u
* <i>Lobularia maritima</i>	(alyssum)	u

¹² Previously listed as *Gnaphalium purpureum*, but reidentified Jan 07 by K Ford at CHR

¹³ Less common by 2011 than a decade or 2 earlier

Latin name	Common name	Abundance
* <i>Lotus angustissimus</i> CHR 479811	(slender bird's foot trefoil)	l
* <i>Lotus pedunculatus</i> CHR479828	(lotus major)	o
* <i>Lotus suaveolens</i> CHR479815		l
* <i>Lythrum hyssopifolia</i> CHR479821	(hyssop loosestrife)	u
* <i>Malva</i> sp. [small species, unidentified]	(mallow)	u
<i>Mazus novaezeelandiae</i> ssp. <i>impolitus</i> CHR462446	(dwarf mazus)	la
* <i>Medicago lupulina</i> CHR477740	(black medick)	o
* <i>Melilotus indicus</i>	(King Island melilot)	la
<i>Mentha cunninghamii</i> ¹⁴ CHR462454	(NZ mint)	l
* <i>Mentha pulegium</i>	(pennyroyal)	l
* <i>Mentha suaveolens</i> CHR479834	(apple mint)	u
* <i>Mimulus guttatus</i>	(monkey musk)	u
* <i>Modiola caroliniana</i>	(creeping mallow)	c
* <i>Myosotis laxa</i>	(water forget-me-not)	u
<i>Myriophyllum pedunculatum</i> CHR466858		la
<i>Myriophyllum votschii</i>		lc
* <i>Oenothera stricta</i> CHR462441	(evening primrose)	c
* <i>Orobanche minor</i> CHR479816	(broomrape)	o
<i>Oxalis exilis</i>	(creeping oxalis)	u
<i>Oxalis rubens</i> CHR462443		u
* <i>Parentucellia viscosa</i> CHR479822	(tarweed)	o
* <i>Phytolacca octandra</i>	(inkweed)	u
* <i>Plantago coronopus</i>	(buck's horn plantain)	la
* <i>Plantago lanceolata</i>	(narrow-leaved plantain)	o
* <i>Plantago major</i>	(broad-leaved plantain)	l
* <i>Polycarpon tetraphyllum</i>	(allseed)	la
* <i>Persicaria</i> (<i>Polygonum</i>) <i>hydropiper</i>	(water pepper)	u
* <i>Portulacca oleracea</i>	(purslane)	o
<i>Potentilla anserinoides</i>	(native cinquefoil)	lc
* <i>Prunella vulgaris</i>	(selfheal)	lc
<i>Pseudognaphalium</i> sp. (<i>P. luteo-album</i> agg.; <i>P. "Kaitorete"</i> of A P Druce)	(cudweed)	lc
<i>Ranunculus acaulis</i>	(sand buttercup)	u
* <i>Ranunculus repens</i>	(creeping buttercup)	lc
* <i>Rorippa nasturtium-aquaticum</i> CHR479833	(two-row watercress)	lc
* <i>Rumex acetosella</i>	(sheep's sorrel)	lc
* <i>Rumex crispus</i>	(curled dock)	u
* <i>Sagina apetala</i>	(pearlwort)	u
* <i>Sagina procumbens</i>	(procumbent pearlwort)	u
<i>Samolus repens</i>	(sea primrose)	lc
<i>Sarcocornia quinqueflora</i>	(glasswort)	lc
<i>Sebaea ovata</i> CHR		l
<i>Selliera radicans</i>	(half star)	lc
<i>Selliera rotundifolia</i>	(half star)	lc
* <i>Senecio bipinnatisectus</i>	(fireweed)	o
* <i>Senecio elegans</i> CHR479416	(purple groundsel)	c
* <i>Senecio glastifolius</i>	(holly-leaved senecio) ¹⁵	c

¹⁴ Scrambling to 0.5 m or more, among *Apodasmia* near the river

Latin name	Common name	Abundance
Senecio glomeratus CHR	(NZ fireweed)	u
* Senecio jacobaea (Jacobaea vulgaris)	(ragwort)	o
Senecio minimus CHR475282		u
Senecio rufigliandulosus CHR479835		u
* Sherardia arvensis	(field madder)	u
* Silene gallica	(catchfly)	o
* Silybum marianum	(variegated thistle)	l
* Solanum chenopodioides	(velvety nightshade)	o
* Solanum nigrum	(black nightshade)	u
* Sonchus oleraceus	(puwaha)	o
* Stachys sylvatica	(hedge woundwort)	u
* Stellaria media	(chickweed)	u
* Symphyotrichum subulatum (Aster subulatus)	(sea aster)	o
* Taraxacum officinale	(dandelion)	u
* Trifolium arvense	(haresfoot trefoil)	lc
* Trifolium dubium	(suckling clover)	o
* Trifolium fragiferum CHR477741	(strawberry clover)	c
* Trifolium striatum CHR479809	(striated clover)	u
* Trifolium repens	(white clover)	lc
* Trifolium subterraneum	(subterranean clover)	lc
* Verbascum thapsus	(woolly mullein)	u
* Verbena bonariensis CHR462467	(purple-top)	u
* Vicia disperma	(small French tare)	o
* Vicia hirsuta	(hairy vetch)	o
* Vicia sativa	(vetch)	o
Wahlenbergia sp. (prob. W. rupestris)	(harebell)	u
<u>Fern ally</u>		
*Selaginella kraussiana CHR479836	(selaginella, African clubmoss)	u
<u>Ferns</u>		
Adiantum cunninghamii	(maidenhair fern)	l
Asplenium flaccidum	(hanging spleenwort)	u
Asplenium gracillimum WELT		u
Asplenium oblongifolium WELT	shining spleenwort	l
Asplenium polyodon	(sickle spleenwort)	u
Blechnum chambersii CHR479839		l
Blechnum discolor CHR466855	(crown fern)	u
Blechnum fluviatile CHR479838		u
Blechnum minus (of NZ authors)	(swamp kiokio)	o
Blechnum novae-zelandiae	(kiokio)	u
Blechnum triangularifolium CHR462481	(cliff kiokio)	l
Cyathea cunninghamii WELT	gully tree fern	u ¹⁶
Cyathea dealbata	(ponga)	u
Cyathea medullaris CHR479837	(mamaku)	u
Dicksonia fibrosa CHR	(wheki-ponga)	u

¹⁵ Being removed by hand-pulling each October, from 1995

¹⁶ Two without trunks on south side of terrace remnant; found 12 Oct 06

Latin name	Common name	Abundance
Dicksonia squarrosa CHR466854	(wheki)	u
*Dryopteris filix-mas ¹⁷ CHR	(male fern)	u
Histiopteris incisa	(water fern)	u
Hypolepis ambigua		u
Hypolepis lactea ¹⁸ WELT		u
Microsorium pustulatum WELT	(hound's tongue fern)	o
Paesia scaberula	(ring fern)	u
Pellaea rotundifolia s.s.	(button fern)	u
Pneumatopteris pennigera		u
Polystichum neozelandicum ssp. zerophyllum WELT	(hard shield fern)	u
Polystichum vestitum WELT	(shield fern)	
Polystichum wawranum WELT	(hard shield fern)	u ¹⁹
Pteridium esculentum	(bracken)	la
Pteris pendula (P. macilenta of NZ authors)		u
Pteris tremula	(shaking brake)	u
Pyrrosia eleagnifolia ²⁰ CHR	(leatherleaf fern)	u
Rumohra adiantiformis		u
<u>Herbaceous monocots</u>		
<u>Orchids</u>		
Microtis unifolia	(onion-leaved orchid)	o
Spiranthes sinensis	(lady's tress orchid)	u
Thelymitra longifolia agg.	(white sun orchid)	lc
Thelymitra pauciflora agg.	(purple sun orchid)	l
<u>Grasses</u>		
* Agrostis stolonifera ²¹	(creeping bent)	l
* Aira caryophyllea	(silvery hair grass)	lc
* Ammophila arenaria CHR479825	(marram grass)	a
* Anthoxanthum odoratum	(sweet vernal)	lc
Austroderia (Cortaderia) fulvida CHR466857	(cliff toetoe)	u
Austroderia (Cortaderia) toetoe CHR466856	(toetoe)	c
* Briza maxima CHR	(large quaking grass)	u(1)
* Briza minor	(slender quaking grass)	u
* Bromus diandrus	(ripgut brome)	a
* Bromus hordeaceus	(soft brome)	u
* Bromus willdenowii	(prairie grass)	u
* Catapodium rigidum CHR462452	(hard grass)	lc
* Cortaderia seloana	(pampas grass)	o
* Cynodon dactylon	(Indian doab)	o

17 One plant, 7 April 1991; voucher collected, then eradicated.

18 Few plants just above Whangaehu R among *Apodasmia*; collected by CCO and G. Jane, 1 March 2005; noted colourless glandular hairs on lamina & rhachises, sori partly protected by inrolled edges of pinnae; Leon Perrie (WELT) noted normal spores, so not a hybrid.

19 *P. wawranum* found 12 Oct 06, with *P. nz.*, on side of terrace remnant; the first time I've seen *P. waw.* near the coast in this region (CCO). *P. vestitum* also present.

20 On boxthorn, 2.10.97

21 Check - May have been recorded in error?

Latin name	Common name	Abundance
* <i>Cynosurus cristatus</i> CHR479830	(crested dogstail)	o
* <i>Dactylis glomerata</i> CHR479823	(cocksfoot)	lc
<i>Dichelachne crinita</i>	(plume grass)	u
* <i>Eragrostis brownii</i> CHR462475	(bay grass)	u
* <i>Ehrharta erecta</i> ²² CHR	(veld grass)	u
* <i>Festuca rubra</i> subsp. <i>commutata</i>	(Chewings fescue)	u
* <i>Glyceria declinata</i>	(floating sweetgrass)	l
* <i>Holcus lanatus</i>	(Yorkshire fog)	l
<i>Lachnagrostis billardierei</i>	(sand bent)	o
<i>Lachnagrostis filiformis</i> s.s. CHR462445	(tumble-grass, NZ wind grass)	l
* <i>Lagurus ovatus</i> CHR479412	(hare's tail)	a
* <i>Lolium perenne</i>	(perennial ryegrass)	u
<i>Microlaena stipoides</i>	(meadow ricegrass)	u
* <i>Parapholis incurva</i> CHR466861		lc
* <i>Paspalum dilatatum</i>	(paspalum)	o
* <i>Pennisetum clandestinum</i> CHR479414	(kikuyu grass)	u
<i>Poa anceps</i> ssp. <i>anceps</i> CHR462484, 479818-9		lc
* <i>Poa pratensis</i> CHR479413	(Kentucky bluegrass)	lc
* <i>Poa triviale</i>		l
* <i>Polypogon monspeliensis</i>	(beard grass)	lc
* <i>Rytidosperma racemosum</i> CHR477739, 479820	(danthonia)	lc
<i>Rytidosperma unarede</i>		u
* <i>Schedonorus arundinacea</i>	(tall fescue)	c
* x <i>Schedololium holmbergii</i> (<i>Lolium perenne</i> X <i>Schedonorus arundinacea</i>) CHR466860		u
* <i>Setaria gracilis</i> CHR462468	(knot-root bristle grass)	lc
<i>Spinifex sericeus</i>	(spinifex)	c
* <i>Sporobolus africanus</i>	(rat's tail)	o
* <i>Vulpia bromoides</i>	(vulpia hair grass)	lc
<i>Zoysia minima</i> CHR462476		u
<u>Sedges</u>		
<i>Carex breviculmis</i> CHR462478		u
<i>Carex geminata</i> s.s. ²³ CHR		l
<i>Carex lessoniana</i> CHR462455 ⁶		l
(x) <i>Carex litorosa</i> CHR462444		u
<i>Carex pumila</i>	(sand carex)	c
<i>Carex testacea</i> s.s. CHR479824		u
<i>Carex virgata</i>		u
<i>Carex</i> sp. (unnamed: <i>C. geminata</i> agg. "giant species" CHR462456		u
* <i>Cyperus congestus</i> ²⁴ CHR		u

²² 1st found 10.10.02, under dead (cut & poisoned) sand wattle – seed prob. dropped by perching bird; large patch found close to pine boundary Oct 2002.

²³ Found in fruit 12 Oct 06, above river bank (Whitiau is one of few places with this species **and** the larger unnamed one – mainly coastal - allied to it)

Latin name	Common name	Abundance
Cyperus ustulatus	(mariscus)	o
Ficinia (Isolepis) nodosa	(club sedge)	a
Ficinia (Desmoschoenus) spiralis	(pingao)	o
Eleocharis acuta CHR462471	(sharp spike sedge)	u
Eleocharis gracilis CHR462472	(slender spike sedge)	u
Isolepis basilaris CHR462448		l
Isolepis cernua		l
* Isolepis marginata CHR462447		lc
Isolepis prolifera CHR462473		u
* Isolepis sepulchralis CHR		u
* Isolepis setacea CHR		u
Machaerina (Baumea) juncea CHR464593		u
Machaerina sinclairii CHR479840	(tuhara)	u
Schoenoplectus pungens	(3-square)	la
Schoenoplectus tabernaemontani CHR462470	(kapungawha)	la
Schoenus nitens		a
<u>Rushes</u>		
Apodasmia (Leptocarpus) similis	(jointed wire-rush, oioi)	a
* Juncus articulatus CHR479831	(jointed –leaved rush)	la
Juncus australis		l
* Juncus bufonius CHR	(toad rush)	l
Juncus caespiticius CHR462474		o
Juncus edgariae		u
* Juncus effusus	(soft rush)	u
* Juncus fockei		u?
Juncus kraussii spp. australiensis	(sea rush)	lc
Juncus pallidus	(wiwi)	o
<u>Monocot herbs other than orchids, grasses, sedges, rushes</u>		
* Allium cepa ²⁵ CHR	onion	u
* Aristeia ecklonii ²⁶ CHR		u (1)
Libertia peregrinans CHR462442	(sand iris)	lc
Phormium cookianum CHR479841	(coastal flax, wharariki)	l
Phormium tenax	(NZ flax, harakeke)	u
* Scilla non-scripta	bluebell	u ²⁷
* Sisyrinchium "blue"		lc
* Tradescantia fluminensis ²⁸	(wandering Jew)	u
Triglochin striatum	arrow grass	o

²⁴ One plant 18/1/00; eradicated (made into CHR specimen)

²⁵ Collected with ripe fruit 1 March 2005; probably washed into the reserve in floods of Feb. 2004, when onion crops up-river were flooded.

²⁶ One robust plant among rushes in dune slack; found John Williams 12.10.07; patch of plants over 5 m diam area on 2.11.11 (attempted to eradicate them all; GPS of site for follow-up)

²⁷ 1 patch found in flower, 12 Oct 06; near river among oioi, perhaps came in flood?

²⁸ One patch under willows on river bank (L. Stowell, Oct 1997); seen there again on 12 Oct 06

Latin name	Common name	Abundance
Mosses ²⁹		
Warnstorfia fluitans (Hedw.) Loeske		
Triquetrella papillata (Hook.f. et Wils.) Broth.		
Tortula muralis Hedw.		
Pseudoscleropod purum (Hedw.) Fleisch.		
Ceratodon purpureus (Hedw.) Brid.		
Campylopus introflexus (Hedw.) Brid.		
Lichens ³⁰		
Xanthoria parietina (L.) Th. Fr.		
Sarrameana albidoplumbea (Hook.f. et Taylor) K		
Rimelia reticulata (Taylor) Hale et Fletche		
Usnea rubicunda Stirton		
	Indigenous Species	Adventive Species
TOTALS (incl. mosses and lichens)	150	152

²⁹ Species vouchered by C Ogle to WELT herbarium – IDs by WELT staff

³⁰ Species vouchered by C Ogle to WELT herbarium

Additional Indigenous Plants in Pine Areas close by Whitiāu SR:-

Machaerina (Baumea) rubiginosa CHR	H. hydrophila x H. novae-zeelandiae CHR
Blechnum penna-marina CHR	Linum monogynum
Carex sinclairii CHR	Melicytus ramiflorus (mahoe)
Coprosma rigida	Polystichum silvaticum
Gratiola sexdentata CHR	Potamogeton cheesemanii CHR
Hydrocotyle hydrophila	Ranunculus glabrifolius (waoriki)
	Schoenus maschalinus

Additional Indigenous Species on Sedimentary Sea Cliffs in Scenic Reserve Immediately West of the Scientific Reserve

Epilobium komarovianum

Indigenous Species of old pine areas near Kaitoke Prison 24/10/92, 4/11/95

Asplenium flabellifolium	Microlaena stipoides (meadow rice-grass)
Asplenium flaccidum	Microsorium pustulatum (hounds tongue)
Asplenium oblongifolium	Microtis unifolia (onion-leaved orchid)
Asplenium polyodon	Muehlenbeckia complexa (pohuehue)
Caladenia catenata (?)	Pellaea rotundifolia
Chiloglottis cornuta	Poa pusilla
Corybas trilobus agg.	Polystichum neozelandicum ssp. zerophyllum
Doodia media	Pteridium esculentum (bracken)
Earina mucronata	Pterostylis sp. (P. banksii?)
Geranium aff. microphyllum	Rumohra adiantiformis
Euchiton collinus (syn. E. gymnocephalus)	Tetragonia implexicoma (NZ spinach)
Hypolepis ambigua	Thelymitra longifolia
Ficinia nodosa (club sedge)	

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