NOTES ON THE OTAMAHUA/QUAIL ISLAND VASCULAR FLORA

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Information on the flora of Otamahua has been recorded recently in five articles (Burrows et al. 1999; Burrows 2000; Burrows & Watson 2000; Burrows 2001, 2002). Since the last of these came out further additions have been made to the flora and there have been other changes for a variety of reasons. This brief article is an update of the information about the flora in general and some particular cases, including weedy species.

1. Species recently discovered, naturally occurring

Indigenous

Asplenium lyallii	rock crevice fern	one plant on shaded rock
Elymus tenuis	long-stemmed bluegrass	patches in dry grassland
Suaeda novae-zelandiae	sea blite	few plants on beach

Introduced

Calceolaria tripartita	yellow slipper	one plant in disturbed ground
Carduus nutans	nodding thistle	one plant in dry grassland
Dianthus armeria	deptford pink	short grassland
Fallopia convolvulus	cornbind	grassland on disturbed areas
Luzula flaccida	lax woodrush	shaded bank
Rumex pulcher	fiddle dock	grassland on disturbed areas
Solanum chenopodioides	velvety nightshade	one plant in shrubby area
Sorbus aucuparia	rowan	one plant in planted area

2. Indigenous species recently planted (new to the island)

Asplenium gracillimum	graceful spleenwort	several plants
Clematis marata	shrub clematis	several plants
Coprosma areolata	marble-leaved coprosma	several plants
Elaeocarpus hookerianus	pokaka	two plants
Euphorbia glauca	N.Z. spurge	several plants
Melicytus micranthus	shrubby mahoe	one plant
Muehlenbeckia astonii	Aston's pohuehue	several plants
Neomyrtus pedunculata	rohutu	several plants
Olearia fragrantissima	fragrant tree daisy	several plants

3. Indigenous species for which there have been name changes or confusion about identity

Convolvulus waitaha	small convolvulus (formerly *C. verecundus* var. *waitaha*)	indigenous to Otamahua
Crassula colligata	dryland succulent (confused with *C. sieberiana* which is also present)	indigenous to Otamahua
Olearia adenocarpa	Canterbury shrub daisy (*O. odorata*)	planted
Polystichum oculatum	dark shield fern (*P. richardii*)	indigenous to Otamahua

4. Rediscovery of an indigenous species

Aciphylla subflabellata – narrow-leaved aciphylla was recorded on Otamahua before 1999 (Molloy 1979), but was not seen lately until John Watson found six plants in grassland above Walkers Beach. A few more individuals have since been found.

5. Indigenous species that were recently planted but appear not to have survived

Carex comans	coastal sedge
Clematis paniculata	white clematis
Parsonsia heterophylla	N.Z. jasmine
Schefflera digitata	pate

6. Species indigenous to the island that have increased naturally since 1998 as a result of our intervention

Rumex flexuosus	N.Z. dock has increased on some planting areas after rank grass was killed with glyphosate prior to tree-planting
Solanum laciniatum	poroporo increases on planting areas, sometimes forming large patches
Senecio glomeratus	N.Z. groundsel (fireweed) becomes abundant on planting areas at the eastern end of the island
Senecio minimus	Fireweed; also increases, but not as vigorously as does *S. glomeratus*
Tetragonia trigyna	N.Z. spinach is forming large patches in the shade of conifer plantations. The absence of rabbits contributes to this.

7. Ferns

The fern flora of Otamahua has grown by seven species since the earlier list was printed in this journal (Burrows 2000). They are (including *Asplenium lyallii* listed above as naturally-occurring and *A. gracillimum* as introduced): *Azolla filiculoides**, *Histiopteris incisa**, *Hypolepis* sp. resembling *millefolium**, *Microsorum pustulatum*, *Polystichum vestitum*. The last five in this list are all naturally-occurring, those marked * are recent arrivals.

8. Cases of mistaken identity

- *Hebe traversii* – hillside H. Several well-grown individuals of this species, planted in the early 1980s, were mistaken by us for *H. strictissima*, Banks Peninsula Hebe (recently planted on Otamahua). Jorge Santos remarked on their distinctiveness and a close check confirms his view.
- *Pittosporum ralphii* – Ralph's pittosporum: this species was planted before the 1980s. We also listed *P. crassifolium* (karo) in 1999 but conclude now that it is not present.

Both *H. traversii* and *P. ralphii* are spreading naturally on Otamahua. Though indigenous to New Zealand they do not occur naturally on Banks Peninsula, but we have decided not to remove them as they do not threaten the integrity of our main woodland plantings. Another species with similar status is self-introduced *Coprosma repens* (taupata), present in a few places on the southern coastline.

9. An Australian tree

Some individuals that closely resemble *Myoporum insulare* (Australian ngaio; but may be hybrids of this with *M. laetum*) were planted on the island in the early 1980s. Their removal would create large gaps in some important planted areas and it has been decided to allow them to stay. Eventually the *M. insulare* genotypes will probably be swamped by genes from the very abundant *M. laetum* population that has been planted.

10. Introduced woody weeds

The strategy for dealing with eight shrub weed species (outlined in detail in Burrows 2002) has been to remove all adults so that no more seeds are dispersed. This has been accomplished for *Crataegus monogyna*, hawthorn; *Cytisus scoparius*, broom; *Ribes sanguineum*, flowering

currant; *Rosa rubiginosa*, sweet brier; *Sambucus nigra*, elderberry. For them all that remains is to find any juveniles and kill them. Three species, *Chrysanthemoides monilifera*, boneseed; *Lycium ferocissimum*, boxthorn and *Ulex europaeus*, gorse, are down to small populations in sites that are difficult to access. It is hoped that these will be reduced even more before the end of 2005. It has taken a huge effort to get this far. Great vigilance and effort will be needed in the next few years to locate and deal with the juveniles. Fortunately hawthorn, currant, brier and elderberry have seeds with short shelf life. Three of the others (gorse, broom, boneseed) will be more difficult to eradicate as they have long-lived seeds. The seed longevity for boxthorn is not known (it may be short). It does have great powers of resprouting from cut and poisoned stumps, however.

11. Introduced herbaceous weeds – species more numerous than originally realized

Conium maculatum	hemlock is known from six locations, but is gradually being reduced as seedlings appear
Conyza albida	fleabane is in many locations – seeds may be arriving aerially
Dryopteris filix-mas	male fern has turned up in many locations – spores must be continually arriving, aerially
Lactuca serriola	prickly lettuce – in disturbed sites, probably arising from dormant seeds
Oenanthe pimpinelloides	parsley dropwort – this poisonous plant has been found in several sites, including Walkers Beach where it must have established from floating seeds. It is present on King Billy Islet where control efforts are needed.
Polypodium vulgare	common polypody is in several locations in conifer plantations

12. Introduced herbaceous weeds – species that increase abundantly on planting areas or elsewhere

Carduus tenuiflorus	winged thistle
Cirsium arvense	californian thistle
Cirsium vulgare	scots thistle
Phalaris aquatica	big canary grass

We are greatly troubled by the first three species (especially the second and third) on some sites. We are attempting a "double-spraying" strategy to obtain better control of them. We are also attempting to eliminate the

very invasive canary grass, accidentally introduced on machinery in the 1980s.

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Hebe strictissima