Vascular Flora of Walker Island, Rangaunu Harbour

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INTRODUCTION

Situated near the mouth of the Rangaunu Harbour, Walker Island (Fig. 1) comprises a barrier beach island with both active and quiescent dune systems connected by a narrow strip of exposed sand. Walker Island is a significant breeding ground for the threatened New Zealand dotterel (Charadrius obscurus), white-fronted tern (Sterna striata) and red-billed gull (Larus novaehollandiae) all of which were the subject of a four-year study (1981-1984) by Alison Davis (Waitakere City Council) and Mark Bellingham (Maruia Society) - M. Bellingham (pers. comm. 1993). This unpublished study also noted the importance of the island as a high-tide roost for wader birds, in particular bar-tailed godwits (Limosa lapponica). However no attempt to document the flora was made. On November 17, 1992, the authors visited the island for two hours. During this time the flora was surveyed, and the results are published here.

THE FLORA

A vascular flora of 22 species (1 planted, 11 adventive and 10 indigenous) was recorded (see Appendix 1), with a full set of herbarium

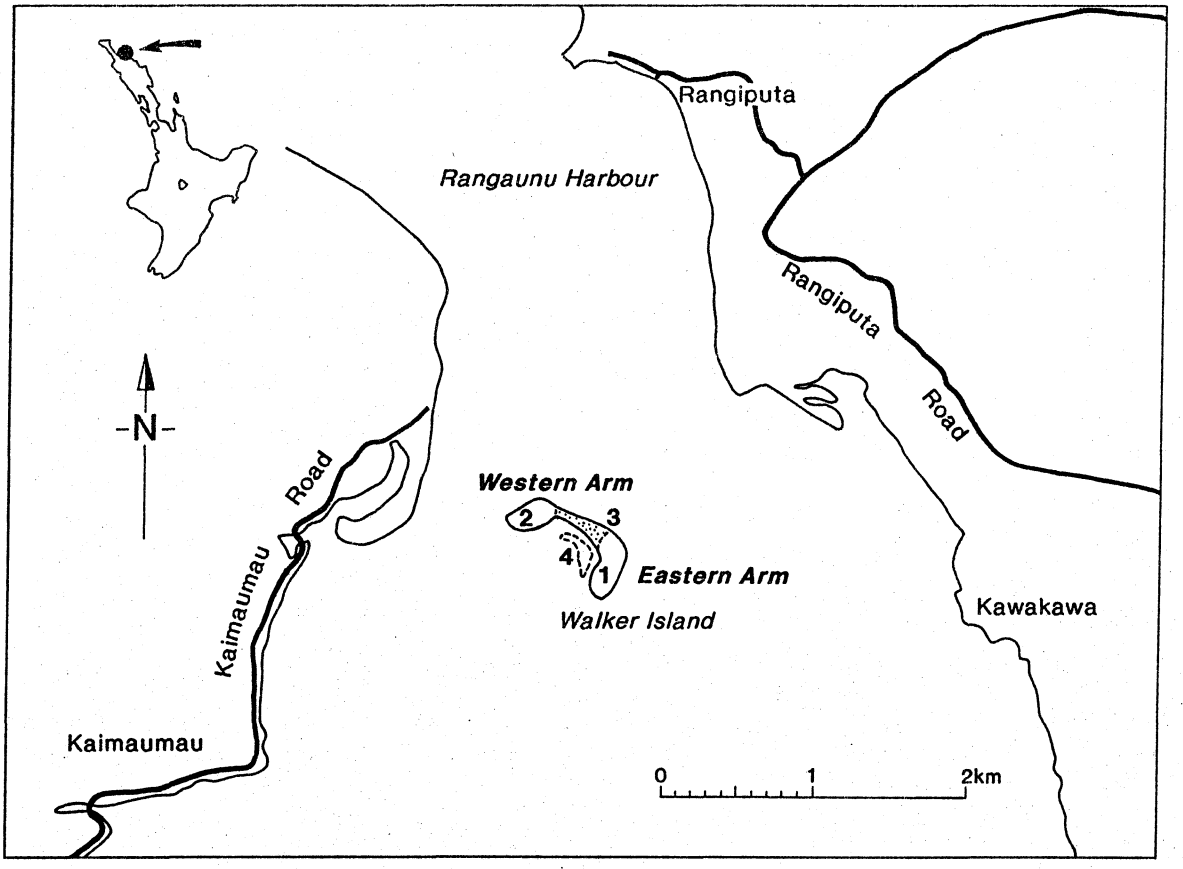

Figure 1. Location of Walker Island and vegetation types

1. Stabilised dunefield, 2. Active dunefield, 3. Bare sand, 4. Shallow estuary

vouchers collected for the Auckland Institute and Museum Herbarium (AK) and the Landcare Research Herbarium (CHR). Two nationally threatened and one nationally "local" species were recorded (Cameron et al. in press), viz. sand tussock (Austrofestuca littoralis) ("Rare"), sand pimelea (Pimelea arenaria) ("Rare") and pingao (Desmoschoenus spiralis) ("Local"). Of these three species, sand tussock was the least common, being confined to the western side of the island amongst dune hollows and near high water tide mark. A thriving population of sand pimelea was recorded. This gynodioecious species appears to comprise two distinct subspecies; a northern taxon with strongly imbricate orbicular leaves, and a more upright shrubby habit (e.g., AK 200900 P.J. de Lange, Te Paki, Waikuku Beach), and a southern taxon with weakly imbricate ovate leaves and less upright, more spreading habit (e.g., AK 208524 P.J. de Lange, Foxton, Himatangi Beach). Walker Island plants are referrable to the northern taxon. Eight female, thirteen male, and twenty-five hermaphroditic specimens were recorded.

VEGETATION TYPES OF WALKER ISLAND

Walker Island is divisible into four main habitat types (see Fig. 1): (1) Stabilised dunefield; (2) Active dunefield; (3) Bare sand; (4) Shallow estuary. The vegetation of these habitat types is noted as follows:

1. Stabilised dunefield

Stabilised dunefield is confined to the eastern "arm" of the island. In simple terms, the dominant vegetation is a Spinifex sericeus grassland. Within this grassland prominent species include: leafless sedge (Isolepis nodosa), sand pimelea, and the annuals, quaking grass (Briza maxima), harestail (Lagurus ovatus), sheeps sorrel (Rumex acetosella), and fleabane (Conyza albida). New Zealand windgrass (Deyeuxia billarierei), catsear (Hypochoeris radicata), and catchfly (Silene gallica subsp. gallica) were especially prominent on the foredunes. A single pine (Pinus radiata) and kahikatoa (Leptospermum scoparium var. incanum†) were noted along the eastern foredune set, the pine being a survivor from a Northland Harbour Board planting which was the subject of an attempted eradication programme by the local Department of Conservation Field Centre. This solitary specimen was removed during our visit.

The dense Spinifex and sand pimelea of this habitat type were frequented by the shore skink (Leiolipisma smithi).

2. Active dunefield

Active dunefields, the dominant vegetation, is confined to the western "arm" of Walker Island and reflects the highly dynamic nature of this habitat type. The dominant species are the sand binders Spinifex sericeus and pingao. Infrequent associations include sand tussock, and Pseudognaphalium "coast".

This is the habitat favoured by New Zealand dotterel, and to a lesser extent variable oystercatcher (Haematopus unicolor), seventeen of which were seen during our visit.

3. Bare sand

As the name implies, the sand connecting eastern and western "arms" of Walker Island was totally devoid of vegetation. The bare sand area was the habitat preferentially selected by white-faced terns and red-billed gulls for nesting and is also used as a roost during high tide for wader birds frequenting the harbour.

4. Shallow estuary

A small embayment along the southern side of the island supports 28, 0.3 to 1.2 m tall mangroves (Avicennia marina var. resinifera). None of the mangroves observed were in a reproductive state or exceeded 30 mm d.b.h. Most were severely damaged by salt spray and windburn, and the majority of specimens were festooned in dried eelgrass (Zostera muelleri) and other coastal detritus, suggesting these mangroves are frequently submerged during storms.

Our view is that the mangroves of Walker Island occupy suboptimal habitat and are probably relatively recent colonisers of the island.

ACKNOWLEDGEMENTS

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† To further distinguish the pink-flowered Leptospermum scoparium var. incanum from L. scoparium var. scoparium the authors have chosen to revive the Maori name "kahikatoa" which is the original northern Maori name for this distinctive taxon.

REFERENCES

Cameron, E.K., de Lange, P.J., Given, D.R., Johnson, P.N., Ogle, C.C. (in press) New Zealand threatened and local plant lists (1993 revision). New Zealand Botanical Society Newsletter 32:

APPENDIX 1: Vascular flora of Walker Island, Rangaunu Harbour (NZMS 260 004 374992, 2 m a.s.l.)

Abbreviations

* = adventive to Walker Island
(pt) = planted and not naturally established
(unc) = uncommon (basis less than 10 individuals seen)
A = adventive
I = indigenous

Gymnosperms (1) (A:1 I:0)
Pinus radiata (pt) - 1 specimen eradicated on visit

Dicotyledonous trees and shrubs (3) (A:0 I:3)
Avicennia marina var. resinifera
Pimelea arenaria subsp. "north"
Leptospermum scoparium var. incanum (unc) - a single 120 mm tall specimen noted

Grasses (5) (A:2 I:3)
Autrofestuca littoralis (unc)
*Briza maxima
Deyeuxia billardieri
*Lagurus ovatus
Spinifex sericeus

Sedges (2) (A:0 I:2)
Desmosschoenus spiralis
Isolepis nodosa

Monocotyledonous herbs (other than grasses and sedges) (1) (A:1 I:0)
*Gladiolus undulatus

Dicotyledonous composite herbs (6) (A:5 I:1)
*Conyza albida
?*C. bilboana - seedlings only
* Crepis capillaris
*Hypochaeris radicata
Pseudognaphalium "coast" (unnamed sp. aff. P. luteoalbum leaves mostly oblong-spathulate to narrowly oblong, rounded)
*Sonchus oleraceus

Dicotyledonous herbs (other than composites) (4) (A:3 I:1)
*Orobanche minor (unc)
Oxalis rubens
*Rumex acetosella
*Silene gallica subsp. gallica

Total number of taxa: 22

Vascular Flora of White Rock, Southern Wairarapa Coast

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INTRODUCTION

White Rock (Fig. 1) is an isolated Tertiary (Homer and Moore, 1989) limestone rock stack located 9 km east of Cape Palliser on the south Wairarapa coast. On 26 February 1993 we examined the flora of White Rock. We are presently unaware of any previous accounts dealing specifically with the rock's flora, although Druce (1976) included it within his indigenous vascular flora checklist (No. 118) of the south Wellington coast.

THE FLORA

A vascular flora of 35 species (25 indigenous, 10 adventive) was recorded (Appendix 1). Of these 20 species were considered uncommon, most being confined to a small area of Zoysia minima turf developed amongst sand and limestone rubble, on the more sheltered northwestern side of the rock. The rock itself is extremely exposed so much of it is unvegetated by vascular species.

Along the south-facing parts of the rock dense mats of horokaka (Disphyma australe subsp. australe) and saltwort (Sarcocornia quinqueflora subsp. quinqueflora) are prominent, while the more sheltered western faces are sparsely vegetated in thickets of boxthorn (Lycium ferocissimum) and taupata (Coprosma repens). Amongst the limestone flags (i.e., pancake-like layers) the vines Muehlenbeckia complexa and Tetragonia trigyna were occasionally encountered along with Chionochloa beddiei, a Cook Strait endemic of similar stature and form to the Northland C. bromoides but reproductively quite different (see Connor, 1991).

The most significant discovery was Rytidosperma petrosum, a small bristle grass, recently recognised from a handful of specimens spanning Cook Strait (Connor and Edgar, 1979). Rytidosperma petrosum has been designated a "Rare" species using the IUCN Red Data Book threatened species classifications (Cameron et al., in press).