

References

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Vascular Flora of North Cape (including Kerr Point, Murimotu Id, Surville Cliffs, Waikuku Flat)

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Introduction

This species list is based on Wheeler's 1963 list and key to communities, slightly modified and reproduced as Figure 1. As "North Cape" is often used loosely, all records (published or herbarium specimens) cannot be assumed to mean the same area as that to which we are referring. Therefore we have only cited records that we know fall within the area covered by Figure 1. Cheeseman's map (1896: plate 23) is reproduced (as Figure 2), to clarify the boundaries of the North Cape District as used last century, also see de Lange & Cameron (1992) for a discussion on this.

Our records for this species list have been obtained from the following sources: Wheeler's 1963 list; other published sources including Carse 1930, Burke 1966, Gravatt 1966, Beever & Jane 1967, Johnstone 1967, 1969, Rae 1970, Druce *et al.* 1979, Beever 1987, Hatch & McCrae 1989, McCrae 1990, Wright and Cameron 1996; observations made by members of the Auckland Botanical Society field trip to the North Cape area 21-24 October 1995; an electronic search of the AK (623 specimens) and AKU (44 specimens) herbaria databases. (Note that neither of these databases is complete. AK lacks half the native dicots and most adventives and AKU lacks most of the ferns); a search of the AK herbarium for recorded species in un-databased families but lacking herbaria voucher specimens; a request to CHR and WAIK herbaria for clarification of location or identification of a few species; 16 CHR vouchers are cited from: Druce *et al.* (1979), de Lange (*pers. comm.*) based upon his CHR specimens, & others checked by CHR herbarium staff at our request; and asking colleagues with a personal knowledge of the area for comment and additions. There will still be some unlocated North Cape herbarium specimens in AK and AKU herbaria. Other New Zealand herbaria, particularly CHR and WELT, will hold many additional North Cape specimens. They were not searched during the compilation of this list.

Impacts on the Vegetation

During our Bot Soc visit (October 1995) browsing mammals were still grossly modifying the vegetation of some areas, especially Waikuku Flat. We saw ample evidence of feral pig, cattle and horse damage. Kikuyu grass was seen growing directly out of horse droppings! On a brighter note a possum/stock-proof fence was being erected just inside the Maori land (see Figure 1 for its location). The Department of Conservation (DoC) hopes to complete the fence (down the cliffs) this coming summer (1996/97). Since our Bot Soc visit, feral animal numbers have been reduced by DoC. Few cattle or horses now exist on the North Cape side of the fence, but possums and probably some pigs are still present (D. McKenzie *pers. comm.*, 1996).

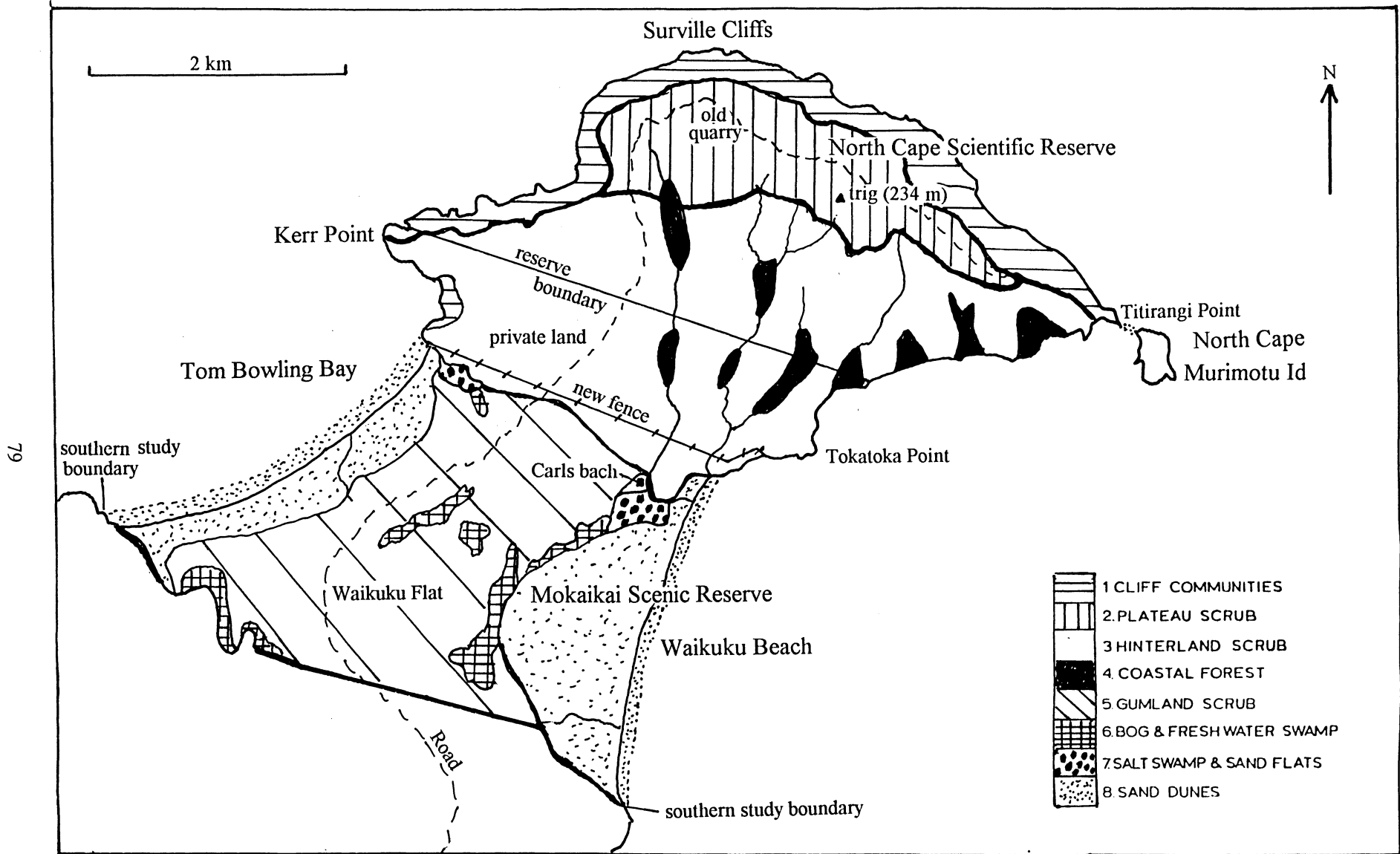
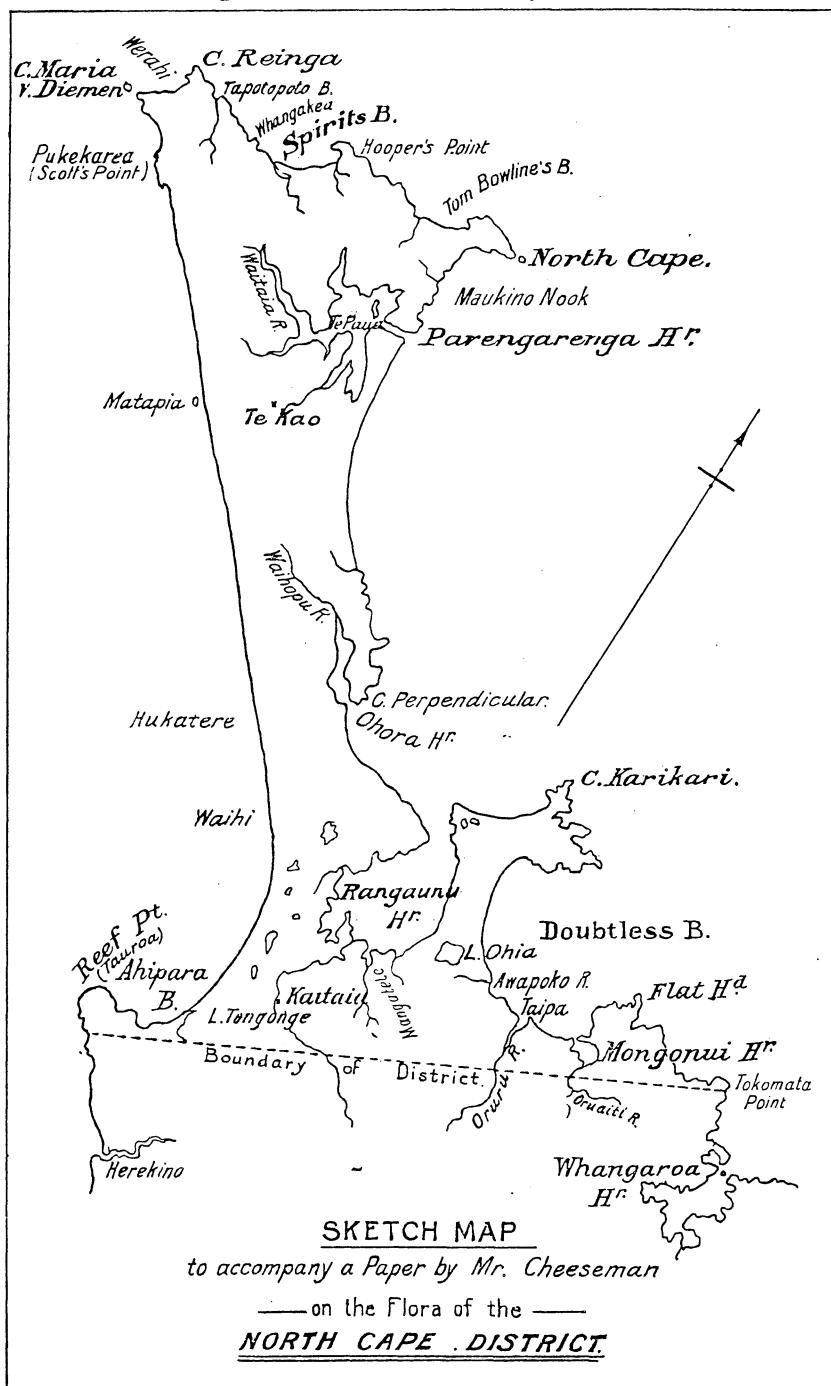


Figure 1. Vegetation Map Showing North Cape Communities (modified from Wheeler, 1963)

Figure 2. Cheeseman's (1896) North Cape District Map

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In the longer term it is hoped that North Cape can be managed as a “mainland island”. To achieve this the predators (rats, cats, mustelids) would have to be managed as well as the browsing mammals and environmental weeds. We would strongly support this type of management in such a scientifically valuable and remote area. The legal protection given to it by its designation as a Scientific Reserve, entry by permit only, reflects North Cape’s biological importance. Management of the reserve is also slowly moving in a more appropriate direction.

The animal browsing opens up the vegetation and thereby encourages weed establishment. We recorded with concern the presence of several new environmental weeds in the area (including pampas grass, polygala, Kikuyu grass) and hope that it will be a high priority for DoC to manage aggressive weed species in this area promptly and in perpetuity. The roadside weed, parsley dropwort (*Oenanthe pimpinelloides*), has been collected this year on Waikuku Flats.

The Flora

The North Cape flora totals 456 taxa (from the main list) of which 72% are native (see Table 1). Unconfirmed North Cape records from last century are recorded in Appendix 1. Dubious and excluded records are listed in Appendix 2.

The rich flora is a reflection of the many different habitats present in this area and most Northland environmental weeds have not yet reached this remote place. North Cape has outstanding flora values because of its endemic taxa and it is also the New Zealand geographical limit for many indigenous species; within New Zealand only the Three Kings and Kermadec Islands lie further north.

Communities based on Wheeler (1963):

- | | | |
|----------------------------------|---|------------------------------|
| 1 cliff communities |) | |
| 2 plateau scrub |) | Surville Cliffs, Kerr Point, |
| 3 hinterland scrub |) | plateau scrub and forest |
| 4 coastal forest |) | |
| 5 gumland scrub |) | |
| 6 gumland bog & freshwater swamp |) | Waikuku Flat, Waikuku Beach, |
| 7 salt swamp and damp sand flats |) | and Tom Bowling Bay |
| 8 sand dunes |) | |

Notes: “8 ABS” includes the sand hills (mostly scrub covered) behind the sand dunes proper. “3 ABS” refers to species identified on the roadside leading in to the Scientific Reserve, starting at the possum fence which separates Waikuku Flat from the North Cape plateau.

Additional key:

- 0 community not identified. Recorded by earlier botanists [Buchanan & Kirk (1869), Kirk (1870), Cheeseman (1896)], but not seen by Wheeler. If these records from last century are unconfirmed by later workers or voucher specimens we have placed them in a separate list (Appendix 1) with the record sourced to the original author(s) (where possible), and sometimes with a comment added. We have done this because there is:
- (i) doubt as to whether they are really within the North Cape area as defined by Wheeler (1963), especially for the Buchanan & Kirk (1869) records as their “North Cape” (their area No. 6) probably refers to the whole area north of about Te Kao;
 - (ii) doubt in some cases as to the precise species referred to, because exact synonymy is not possible.

It is hoped that by separating these records it will encourage others to record the presence of some of these taxa in the future if indeed they occur at North Cape. Twelve of them at least we would expect to be present. There remains some doubt over the presence of a few of the unvouchered species included in the main list. Therefore it would be good to complete the vouchering of the flora from this unique area of New Zealand to remove the doubts.

1/2 refers to the interface between communities 1 and 2.

9 Murimotu (North Cape) Island. Wheeler included this island in her category No. 1. See Wright & Cameron (1996) for a separate list for this island. Note that we have added three species (*Corynocarpus laevigatus*, *Melicope ternata* and *Oenothera stricta*) to their list from three more G. P. Adams (1968) herbarium vouchers located in AK.

- For later additions to the list (of plant species &/or of communities where they are found) the same key has been used. Origins of the later records and publication references are detailed at the end. Where a particular species has been recorded in the same community by more than one person, usually only the earliest record is cited.
- Current plant names are used. Synonymy as appears probable is shown in brackets.
- Adventives are identified by an asterisk *. A date is included (in brackets) at the end of the entry for the first definite North Cape adventive record (based on a published record or herbarium specimen).
- The identification of locally endemic taxa generally follows Druce *et al.* (1979), with names updated.
- A number of species are represented in herbaria by more than one voucher specimen; usually no more than two vouchers per species are cited in this list.
- Surnames after the records refer to the author of a publication (see References) or an herbarium specimen (see Collector list - Appendix 3). Where confusion may arise (eg Beever, Cheeseman, Wright) an "(H)" is inserted after the name to indicate that it is an herbarium record.

Ferns & Fern Allies (57)

Adiantum aethiopicum 4 Wheeler, 1 or 2 Cooper, 5 ABS, AK 24453, 214789 (1 or 2)
Adiantum cunninghamii 4 Wheeler, 9 Adams, 1, 3 Wright (H) AK 168356 (1), 214809 (?1)
Adiantum fulvum 0 Wheeler, 1 or 2 Gardner AK 149861
Adiantum hispidulum (*A. pubescens*) 4 Wheeler, 9 Adams, 1 Druce *et al.*, 5, 8 ABS
AK 149855 & 165515 (1)
Anarthropteris lanceolata (*A. dictyopteris*) 4 Wheeler AK 127941
Asplenium bulbiferum 4 Wheeler
Asplenium flaccidum 4 Wheeler
Asplenium northlandicum (*A. obtusatum*) 1, 4 Wheeler, 9 Parrish, [south Waikuku
Beach ABS] AK 168341 & 214870 (1)
Asplenium northlandicum x *A. oblongifolium* 1 Druce *et al.* (single plant) CHR 326179
Asplenium oblongifolium (*A. lucidum*) 4 Wheeler, 9 Adams, 1 Druce *et al.*, 1/2, 8 ABS
AK 118404 (9), 214854 (1 or 2)
Blechnum fluviatile 4 Wheeler
Blechnum membranaceum 4 Parrish AK 127942
Blechnum minus 1 or 2 Wright (H) AK 224987
Blechnum nigrum 4 Wheeler
Blechnum penna-marina 4 Wheeler
Blechnum sp. 1 (*B. capense*) 3, 5 Wheeler, 2 ABS
Blechnum sp. 3 (Green Bay) 1 de Lange AKU 22952
Botrychium australe 2 Findlayson, 3, 4, 6 Wheeler AK 144516 (3)
Cheilanthes sieberi (*C. tenuifolia*) 0 Wheeler, 3 Parrish AK 128360
Christella dentata 8 R. M. Bellingham photo (de Lange *pers. comm.*, 1996) (Waitangi Stream)
Cyathea dealbata 4 Wheeler
Cyathea medullaris 4 Wheeler, 2 ABS
Dicksonia squarrosa 1 de Lange CHR 473024

Doodia media subsp. *australis* 4 Wheeler, 9 Adams, 1 Druce *et al.*, 1/2, 5 ABS
 AK 118385 (9)
Gleichenia dicarpa 5, 6 Wheeler
Gleichenia microphylla 5 Parris, 1/2 Druce *et al.* AK 128036 (5)
Hymenophyllum demissum 4 Wheeler AK 127938 & 176608
Hymenophyllum dilatatum 4 Wheeler
Hypolepis ambigua (*H. tenuifolia*) 0 Wheeler, 3 Parris, 6 ABS AK 127939 (3)
Leptopteris hymenophylloides 4 Wheeler
Lindsaea linearis 3, 4, 5, 6 Wheeler, 1/2 Druce *et al.*, 9 Wright & Cameron AK 223680 (1 or 2)
Lycopodium cernuum 5 Wheeler, 1/2 Druce *et al.*
Lycopodium deuterodensum 5 Wheeler, 1/2 Druce *et al.* AK 220244 (1 or 2)
Lycopodium laterale 4,5 Wheeler, 6 Hynes AK 50356-57 (6)
Lycopodium varium (*L. billardieri*) 4 Wheeler
Macrothelypteris torresiana 1 de Lange AK 228395
Ophioglossum petiolatum 8 de Lange (Tom Bowling Bay) CHR 472750
Paesia scaberula 0 Wheeler, 5 ABS
Pellaea rotundifolia 5 Wheeler
Phylloglossum drummondii 6 Wheeler, 1 de Lange AK 50342-43 (6) CHR 473022 (1)
Phymatosorus pustulatus (*Phymatodes diversifolium*) 4 Wheeler, 1 Druce *et al.*, 1/2 (near Titirangi
 Point) ABS
Phymatosorus scandens (*Phymatodes scandens*) 4 Wheeler
Pneumatopteris pennigera (*Thelypteris pennigera*) 4 Wheeler
Polystichum richardii 4 Wheeler, 9 Adams, 1 Druce *et al.* AK 118398 (9)
Psilotum nudum 4 ABS, 2 Benham (*pers. comm.*, 1996) AK 224996
Pteridium esculentum 4, 5, 6 Wheeler, 2 Gravatt, 1/2 Druce *et al.*, 9 Wright & Cameron, 1 de
 Lange AK 229553 (1)
Pteris comans 4 Wheeler, 1 (2 specimens on serpentine) Hambly (*pers. comm.*, 1996)
Pteris macilenta 4 Wheeler AK 220195 (?4)
Pteris saxatilis 1 Wright (H)(cliff forest), 4 ABS AK 216393 (1), 224115 (4)
Pteris tremula 4 Wheeler, 9 Adams, 5 ABS AK 118388 (9)
Pyrosia eleagnifolia (*P. serpens*) 1 Druce *et al.*
Schizaea fistulosa 0 Wheeler, 3 ABS
Sticherus cunninghamii (*Gleichenia cunninghamii*) 2, 4 Wheeler
Sticherus flabellatus (*Gleichenia flabellata*) 3, 4 Wheeler, 1/2 Druce *et al.*, 5 ABS CHR 326188
Tmesipteris elongata 4 ABS
Tmesipteris lanceolata 4 Beever (H) AK 176616
Todea barbara 5 Wheeler, 2 Wright (H), 4 Beever, 1/2 ABS AK 151271 (2), 168329 (1/2)

Gymnosperms (2)

Agathis australis 4 Wheeler
Phyllocladus "Surville" (serpentine endemic) 1, 3 Wheeler, 2 ABS AK 50877 & 138439 (1)

Dicotyledons (251)

Acaena anserinifolia 3, 4, 6, 8 Wheeler, ?9 Parrish AK 128009 (3)
Alseuosmia x quercifolia 4 Parris AK 128007, WAIK 15511
 **Anagallis arvensis* s.s. 1, 2, 3, 5 Beever & Jane, 9 Wright & Cameron, 7 ABS [1966]
Anaphalis keriensis (*Gnaphalium keriense*) 4 Wheeler
Apium prostratum subsp. *prostratum* (*A. australe*) 3 Wheeler, 9 Wright (H), 1 Druce *et al.*,
 8 ABS AK 118380 & 138390 (9)
Apium "white denticles" 8 Wright AK 165211 & 165553-54
 **Aster subulatus* 9 Parrish [1993]
Atriplex billardieri 0 Wheeler, 8 ABS (114 young plants) AK 26436 & 225314
Beilschmiedia tarairi 4 Wheeler
Beilschmiedia tawa 4 Wheeler
 **Bellis perennis* 6 ABS AK 227026 [1995]
 **Bidens pilosa* 0 Wheeler, 1 (ultramafic scree) de Lange AK 229709 [1991]

- **Blackstonia perfoliata* 1 or 2 Powell, 6 Parris, 1 Wright (H), 9 Wright & Cameron,
1/2 ABS AK 45905, 224978 (1 or 2) [1952]
- Brachyglottis kirkii* var. *angustior* (*Senecio kirkii*) 0 Wheeler, 4 Beever (H) AK 176614 (4)
- Brachyglottis repanda* 1 Druce *et al.*, 1/2 ABS AK 168358 (1)
- **Brassica napus* 9 Wright & Cameron AK 224972 (9) [1995]
- **Cakile edentula* 8 Beever & Jane [1966]
- Calystegia sepium* 4 Wheeler, 9 Wright & Cameron, 6 ABS AK 128378, 226113 (8)
- Calystegia soldanella* 3 Wheeler, 9 Wright & Cameron, 1 (near Titirangi Point) ABS, 7,
8 ABS
- Calystegia tuguriorum* 9 Adams AK 118376 (9)
- Cardamine debilis* agg. 4 Wheeler
- **Cardamine hirsuta* 4 Wheeler [1959-60]
- **Carduus tenuiflorus* 3 Croxall AK 128013 [1969]
- Carmichaelia australis* 8 Wheeler, 1 (Titirangi Point) ABS
- Carpodetus serratus* 4 Wheeler
- Cassinia amoena* (serpentine endemic) 1, 2 Wheeler, 3 ABS AK 10298-99 (1 or 2);
AKU 20746 (1)
- Cassinia amoena* x *C. leptophylla* (*C. x amoenatorata*) Carse, 1 de Lange AK 229535
- Cassinia leptophylla* 0 Wheeler, (*C. retorta* 3, 8 Wheeler), 9 Adams, 1 Wright (H)
AK 155174 (1 or 2), 168353 (1)
- Cassytha paniculata* 1, 2, 3, 5, 6 Wheeler, 7 ABS AK 165538 (2), 227653 (3)
- **Centaurium erythraea* (*C. umbellatum*) 2, 3, 5 Wheeler, 1, 7 ABS AK 138419 (3) [1959-60]
- Centella uniflora* (*C. asiatica*) 3, 4, 5 Wheeler, 1 or 2 Cooper, 1/2 Druce *et al.*,
9 Wright & Cameron, 7 ABS AK 24469
- Centipeda minima* 6 or 7 Parris AK 127981
- **Cerastium glomeratum* (*C. sp.*) 4 Wheeler, 3 Wright (H), 9 Wright & Cameron, 1
(Titirangi Point), 7 ABS AK 151234 (3) [1959-60]
- **Cirsium vulgare* (*C. lanceolatum*) 4 Wheeler, 9 Wright & Cameron [1959-60]
- Clematis paniculata* 4 Wheeler, 1/2 ABS
- Colensoa* (*Pratia physaloides*) 4 Wheeler, 2 Wright (H), 1 Druce *et al.* AK 165516 (2)
- **Conyza albida* 7 or 8 Croxall & Parris, 9 Wright & Cameron, 1/2, 7 ABS
AK 127988 [1969-70]
- Coprosma acerosa* 8 Wheeler [Wheeler also listed this from "open steep faces".
Druce *et al.* says that this was a misidentification of *C. aff. obconica*. *C. acerosa*
is confirmed for area 8 by ABS] AK 227108 & 229065 - 66 (8)
- Coprosma crassifolia* 1 Druce *et al.*
- Coprosma grandifolia* (*C. australis*) 4 Wheeler
- Coprosma x kirkii* (*C. acerosa* x *C. repens*) ?8 Cheeseman (Tom Bowling Bay) AK 8989-91
- Coprosma lucida* 4 Wheeler, 1/2 Druce *et al.*, 9 Wright & Cameron, 3 ABS
AK 227015 (1/2), 229067 (1)
- Coprosma macrocarpa* ?3 Carse (H), 1 Druce *et al.*, 9 Wright & Cameron AK 37286
- Coprosma neglecta* (mainly a serpentine endemic) 1, 1/2 Druce *et al.*, 2 Reeves *et al.*,
9 Wright & Cameron, 3 ABS AK 8823-25 (1 or 2); AKU 17291 (1)
- Coprosma neglecta* ? x *C. rhamnoides* 1, 1/2 Druce *et al.* CHR 354832
- Coprosma aff. obconica* (serpentine endemic) (*C. acerosa* 1 Wheeler) 1 Druce *et al.*
AK 36254 & 138487
- Coprosma parviflora* s.s. 0 Wheeler, 1, 2 Druce *et al.* AK 165545 & 200896 (1)
- Coprosma repens* 1 Wheeler, 9 Wright & Cameron, 8 ABS
- Coprosma rhamnoides* 4 Wheeler, 1/2 Druce *et al.*, 9 Parrish AK 128035 (1 or 2), 139017 (1/2)
- Coprosma robusta* 4 Wheeler, 9 Wright & Cameron, 1/2 ABS AK 227016 (1/2)
- Coprosma spathulata* subsp. (serpentine endemic) 0 Wheeler, 1, 1/2 Druce *et al.* AK 200938 (1);
AKU 22934 (1)
- Coriaria arborea* 4, 5 Wheeler, 3 ABS, 2 de Lange & Winch AK 229537
- Corokia cotoneaster* 1, 2 Wheeler, 3 ABS AK 50345 & 138427 (1 or 2)
- Corynocarpus laevigatus* 4 Wheeler, 9 Adams, 1 Druce *et al.* (some serpentine plants with very
small leaves) AK 50894 (1), AK 118378 (9)
- Cotula coronopifolia* 7 Wheeler
- **Crassula decumbens* 5 Wright (H) AK 165550 [1983]

Crassula sieberiana (*Tillaea sieberiana*) Burke, 9 Wright & Cameron
Cyathodes juniperina 1, 2, 3, 5 Wheeler, 9 Wright & Cameron, 8 ABS AK 24465 (1 or 2), 138489 (1)
Daucus glochidiatus 0 Wheeler, 4 Beever & Jane, 3 Parris AK 128022 (3), 224986 (4)
Dichondra repens 3, 5, 8 Wheeler, 2 Johnstone, 1, 1/2 Druce *et al.*, 9 Wright & Cameron AK 138486 (1)
Disphyma australe subsp. *australe* 1 Wheeler, 9 Wright & Cameron AK 229560 (1)
Dodonaea viscosa 4 Wheeler, 1/2 Druce *et al.* AK 138476 (2), 227120 (1/2)
Dracophyllum lessonianum (*D. urvilleanum*) 1, 2, 3, 5 Wheeler
Dracophyllum ? *viride* (*D. latifolium*) 4 Wheeler
Drosera auriculata 6 Wheeler, 2 Rae, 1/2 ABS AK 138485 (2)
Drosera binata 1, 2, 6 Wheeler, 3 Beever (H) AK 176611 (3)
Drosera pygmaea 1, 2 Wheeler, 1 de Lange CHR
Drosera spathulata 1, 2, 6 Wheeler
Dysoxylum spectabile 0 Wheeler, 4 Beever & Jane AK 127946
Einadia cf. *trigonos* (*Chenopodium* sp. (cf. *C. allanii*) 1 Druce *et al.*), 9 Wright & Cameron (Although the leaves are a similar shape to *E. allanii*, the prostrate habit & the near splash zone habitat place it closer to *E. trigonos*. A similar specimen has been collected on The Bluff, Ninety Mile Beach: AK 229795. *E. allanii* is unknown to EKC and P. J. de Lange in the northern half of the North Id.) AK 59364-65 & 149858, CHR 326171-2
Entelea arborescens 4 Wheeler
Epilobium billardioreanum subsp. *billardioreanum* 0 Wheeler, 6 ABS AK 227107
Epilobium hirtigerum 6 or 8 Cheeseman (H) (Tom Bowling Bay) AK 5648
Epilobium pallidiflorum 6 Wheeler
Euphorbia glauca 8 Wheeler & ABS (at least 14 clumps on Waikuku dunes) AK 224162
**Euphorbia pepus* ?7 Parris, 9 Wright & Cameron AK 128376 [1970]
Fuchsia excorticata 4 Wheeler
Fuchsia procumbens 0 Wheeler, 1 Rickards & Burke, de Lange (bottom of Kerr Pt) (*pers. comm.*, 1996) WELTU 8020
Galium propinquum 0 Wheeler, 1 de Lange (*pers. comm.*, 1996)
Gaultheria antipoda 1/2 Druce *et al.* AK 128005 (1 or 2 or 3)
Geniostoma rupestre var. *crassum* (serpentine endemic) 1 Cheeseman (H), 1, 2 Wheeler AK 7151, 165517 & 226111-12 (1)
Geniostoma rupestre var. *ligustrifolium* (*G. ligustrifolia*) 4 Wheeler, 9 Wright & Cameron, 3 ABS AK 226118 (1), 229685 (1/2)
Geniostoma rupestre var. *ligustrifolium* x *G. rupestre* var. *crassum* 1/2 de Lange AK 226119
**Geranium dissectum* 8 Wheeler [1959-60]
Geranium potentilloides (*G. microphyllum*) 8 Wheeler
**Geranium molle* 4 Wheeler, 6 ABS [1959-60]
**Geranium solanderi* "coarse hairs" 9 Wright & Cameron, 1 (near Titirangi Point), 7 ABS [1995]
Glossostigma elatinoides 0 Wheeler, 7 ABS AK 225000
Gnaphalium audax (*G. collinum*) 0 Wheeler, ?3 Beever & Jane, 1, 1/2 Druce *et al.*, 9 Wright & Cameron AK 149849 (2), 165527 (1/2)
Gnaphalium gymnocephalum (*G. collinum*) 0 Wheeler, ?3 Beever & Jane, 1 or 2 Hynes, 3 Wright (H), 9 Wright & Cameron, 1/2, 3 ABS AK 70112 (1 or 2), 139030 (3)
Gnaphalium involucreatum 0 Wheeler, 3 Beever & Jane
**Gnaphalium purpureum* var. *purpureum* 1/2 ABS AK 227123 [1995]
**Gnaphalium simplicicaule* 1/2 ABS AK 128024 [1968]
Gnaphalium sphaericum 1 Druce *et al.*
Gonocarpus incanus (*Haloragis incana* / *H. procumbens*) (*H. depressa* 0 Wheeler, 2, 3 Beever & Jane), 2 Rae, 1/2 Druce *et al.*, 3 ABS AK 24459 & 139029 (2)
Gonocarpus micranthus (*Haloragis micrantha*) 0 Wheeler
Gunnera dentata (*G. arenaria*) 7 Wheeler
**Hakea gibbosa* 3 Wright (H), 2 Beever AK 128034 (0), 138420 (3) [1970]
**Hakea sericea* 2 Beever AK 108867 (0), 224983 (2) [1966]
Haloragis erecta subsp. *erecta* 3, 4, 5 Wheeler, 9 Wright & Cameron
Haloragis erecta subsp. *cartilaginea* (serpentine endemic) 1, 2 Wheeler AK 5919 (1), 100939 (2)

- Hebe ligustrifolia* 4 Wheeler, 2 Gravatt, 1, 1/2 Druce *et al.*, low form, also exists at Cape Reinga & down coast to near Whangarei (de Lange *pers. comm.*, 1996) AK 207101(1)
- Hebe ligustrifolia* s.s. 2 (not on the serpentine) de Lange (*pers. comm.*, 1996) CHR
- Hebe macrocarpa* var. *brevifolia* (serpentine endemic) 1, 2 Wheeler AK 227425 & 299552 (1)
- Hebe macrocarpa* var. *brevifolia* x *H. ligustrifolia* 2 de Lange (*pers. comm.*, 1996)
- Hedycarya arborea* 4 Wheeler
- Helichrysum lanceolatum* (*H. glomeratum*) 0 Wheeler, 1 Beever & Jane AK 139027; AKU 22933
- Hibiscus diversifolius* 0 Wheeler, 8 sthn end of Waikuku Beach ABS, west end Tom Bowling Bay (some planted?) de Lange, 1 (prostrate form, bottom of Kerr Pt) de Lange (*pers. comm.*, 1996) AK 200899, 200936
- **Hibiscus trionum* 7 or 8 Cheeseman (H), 0 Wheeler AK 5232, 127993 [1896]
- Hoheria populnea* 4 Wheeler
- Hydrocotyle dissecta* 4 Wheeler
- Hydrocotyle novae-zeelandiae* 4, 5 Wheeler AK 128002 (4)
- Hypericum japonicum* 4 Beever & Jane, 3 Wright (H) AK 151235 (3)
- **Hypochoeris radicata* 2 - 8 Wheeler, 9 Wright & Cameron [1959-60]
- Ipomoea cairica* (*I. palmata*) 4, 8 Wheeler AK 7379, 200901 (8)
- Knightia excelsa* 4 Wheeler, Druce *et al.*, 1/2 ABS (many serpentine plants with reduced leaves) AK 200894 (1)
- Korthalsella salicornioides* Burke, 1/2 ABS AK 224977 (1 or 2)
- Kunzea ericoides* var. *linearis* (*Leptospermum ericoides*) 1, 2, 3, 4, 5, 8 Wheeler, 9 Wright & Cameron (prostrate forms common on ultramafics) AK 200928 (1)
- Lagenifera lanata* 5 ABS AK 127980 (5?), 227023 (5)
- Lagenifera pumila* 0 Wheeler, 1, 2 Beever & Jane, 3 ABS AK 127975 (1, 2 or 3)
- **Leontodon taraxacoides* 9 Wright & Cameron, 8 ABS [1995]
- Leptospermum scoparium* 1, 2, 3, 4, 5, 6, 8 Wheeler, 9 Wright & Cameron AK 138484 (1)
- **Leucanthemum vulgare* (*Chrysanthemum leucanthemum*) 3 Beever & Jane [1966]
- Leucopogon fasciculatus* (*Cyathodes fasciculata*) 3,4 Wheeler, 2 Druce *et al.*, 9 Wright & Cameron, 1 de Lange AK 229544 (1)
- Leucopogon fraseri* (*Cyathodes fraseri*) 2, 3, 5, 6 Wheeler, 9 Wright & Cameron, 8 ABS, 1 de Lange AK 229543 (1)
- Leucopogon parviflorus* var. (serpentine endemic) (*Cyathodes parviflora*) 1, 2, 3, 5 Wheeler AK 130914 (2), 165542 (1/2)
- Lilaeopsis novae-zelandiae* (*L. orbicularis*) 7 Wheeler AK 227117
- Limosella lineata* 7 Wheeler AK 128018
- **Linum bienne* 9 Wright & Cameron [1995]
- Linum monogynum* 4, 7 Wheeler
- **Linum trigynum* (*L. gallicum*) 3, 5 Wheeler, 9 Wright & Cameron, 1/2 ABS AK 227121 (1/2) [1959-60]
- Litsea calicaris* 4 Wheeler, 1 Wright (H), 1/2 ABS AK 168328 (1)
- Lobelia anceps* 3, 4, 5, 6 Wheeler, 9 Adams, 2 Rae, 1, 1/2 Druce *et al.*, 8 ABS AK 118375 (9), 138436 (1)
- **Lotus pedunculatus* 3 Parris, 8 ABS AK 127998 [1970]
- **Lotus suaveolens* 6 or 7 Parris, 9 Wright & Cameron, 1/2 ABS AK 127987 [1969]
- **Lupinus arboreus* 8 Beever, 9 Wright & Cameron, 7 ABS AK 127986 [1969]
- **Lychnis coronaria* 4 Beever, 1 (Titirangi Pt) ABS AK 224975 (1) [1986-87]
- Macropiper excelsum* subsp. *excelsum* 4 Wheeler, 1 Druce *et al.* AK 176597 (4)
- **Matthiola incana* 1, 3 Beever & Jane [1966]
- **Medicago arabica* 3 Parris, 9 Wright & Cameron AK 127994, 224167 (9) [1969]
- **Medicago lupulina* 3, 5 Beever & Jane, 9 Wright & Cameron [1966]
- **Medicago nigra* 9 Wright & Cameron, 1 (near Titirangi Point) ABS AK 224168 (9) [1995]
- Melicope simplex* 1, 2 Wheeler AK 165522 & 223014 (1)
- Melicope ternata* 4, 8 Wheeler, 3 Croxall & Parris, 9 Adams AK 118381 (9), 127991 (3)
- Melicytus micranthus* 1 Druce *et al.* AK 168345 & 221776
- Melicytus ramiflorus* 4 Wheeler, 1 Druce *et al.* AK 138477 & 165523 (1)
- **Mentha pulegium* 0 Wheeler, 5 or 6 or 7 Parris, 7 ABS AK 128358 [1969]

- Metrosideros excelsa* 4 Wheeler, 1 Druce *et al.*, 9 Wright & Cameron, 3 ABS
AK 138397 (1); AKU 3716 (1 or 2)
- Metrosideros perforata* 4 Parris AK 127985
- Mida salicifolia* 4 Beever (H) AK 176613
- **Modiola caroliniana* 3 Beever & Jane, 9 Wright & Cameron AK 229058 (3) [1966]
- Muehlenbeckia australis* 4 Wheeler
- Muehlenbeckia complexa* 8 Wheeler, 1 Druce *et al.*, 9 Wright & Cameron, 7 ABS
AK 118365 (9), 138478 (1)
- Myoporum laetum* 0 Wheeler, 1 Beever & Jane AK 127992 & 149856 (1)
- Myosotis discolor* 8 Wright (H) AK 151256 [1979]
- Myriophyllum propinquum* 6 Wheeler, 7*ABS AK 227113
- Myrsine australis* 4 Wheeler, 1 Druce *et al.*, 9 Wright & Cameron, 2 de Lange AK 229555 (1)
- Myrsine salicina* 0 Wheeler, 4 Parris AK 127983
- Nertera setulosa* 4 Beever & Jane, 5 ABS AK 128002 & 138472 (5)
- **Oenanthe pimpinelloides* 5 de Lange AK 229554 [1996]
- **Oenothera stricta* (*O. tetraptera*) 2, 3 Beever & Jane, 9 Adams AK 118382 (9),
138474 (3) [1966]
- Olearia albida* var. *angulata* 0 Wheeler, 1 Druce *et al.*, 4 Beever & Jane
(*O. furfuracea* 1, 2, 4, 5 Wheeler - Druce *et al.* queries the 1 and 2 record; thinks
that *O. albida* was misidentified - we agree and extend the doubt to 4 & 5 records
as well) AK 149880 (1/2), 36314 (1 or 2)
- **Ornithopus pinnatus* 7 ABS AK 227109 [1995]
- **Orobanche minor* 3 Beever & Jane, 9 Wright & Cameron, 7 ABS [1966]
- Oxalis exilis* 1 Druce *et al.* AK 149852, CHR 326195
- Oxalis rubens* (*O. sp.* (*O. corniculata* agg. leaves glabrous) 1 Druce *et al.*), 1 Gardner,
3 Wright (H), 9 Wright & Cameron AK 139018 (3), 149850 (1), CHR 354811
- **Oxylobium lanceolatum* 5 Cameron (pers.ob., 1985) [1985]
- **Paraserianthes* (*Albizia*) *lophantha* 4 Beever, 2 ABS AK 224980 (2), 128012 (4) [1969]
- **Parentucellia viscosa* [*Odontites viscosa*] 2 Gravatt, 3 Beever & Jane, 7 Parris,
9 Wright & Cameron, 1/2, 7 ABS AK 138430 (3), 128003 (?) [1965]
- Parietaria debilis* 1/2 Wright (H), 4 ABS AK 165532 (1/2)
- Parsonsia* "Surville" (serpentine endemic) (*P. heterophylla* 1, 4 Wheeler), 1, 2 Druce *et al.*
AK 149848 (1/2), 165520 (1); AKU 4738 (1)
- **Pavonia hastata* 8 de Lange AK 200902 [1990]
- Pelargonium inodorum* 3, 5 Wheeler
- Peperomia urvilleana* 1, 4 Wheeler, 3 Wright (H) AK 138413 (3), 165541 (1)
- **Physalis peruviana* 3, 4 Wheeler, 1 Wright (H), 1/2 ABS AK 165524 (1) [1959-60]
- **Phytolacca octandra* 3 Croxall AK 127996 [1969]
- Picris burbidgei* (*P. hieracioides*) 0 Wheeler, 3 Beever & Jane, 1 Druce *et al.*,
9 Wright & Cameron AK 222935 (1/2), 225852 (1)
- Pimelea arenaria* 5 Wheeler, 8 sthn end of Waikuku Beach ABS AK 200900 (8);
AKU 3488 (2)
- Pimelea* "Surville" (*P. tomentosa*) 0 Wheeler, 2 Cooper AK 24463 & 130893
- Pimelea* cf. *urvilleana* (var. *erecta*) (*P. prostrata*) 1, 2, 3, 5, 8 Wheeler, 9 Adams,
1, 1/2 Druce *et al.* AK 118366 (9), 200897 (1)
- Pittosporum* aff. *ellipticum* (*P. crassifolium* var.) (*Pittosporum umbellatum*)
(serpentine endemic) 0 Wheeler, 1 Druce *et al.* AK 165547 & 168340
- Pittosporum pimelioides* subsp. *major* (serpentine endemic) (*P. michiei*, *P. reflexum*)
1, 2 Wheeler AK 168377 & 224952 (1)
- Pittosporum tenuifolium* 4 Wheeler
- Plagianthus divaricatus* 7 Wheeler
- **Plantago australis* (*P. media*) 4, 5 Wheeler, 6 or 7 Parris, 6 ABS AK 129076 [1959-60]
- **Plantago coronopus* 4, 7, 8 Wheeler [1959-60]
- **Plantago lanceolata* 7 ABS [1995]
- Plantago raoulii* 1 Wheeler (probably not on serpentine area - Druce *et al.*),
4 Wright (H) AK 138469 (4)
- **Polycarpon tetraphyllum* 1, 2, 3, 5 Beever & Jane, 9 Wright & Cameron [1966]
- **Polygala myrtifolia* 2 ABS (uprooted) AK 224979 [1995]

- **Polygonum hydropiper* 3, 4, 5 Wheeler [1959-60]
Pomaderris ericifolia included by Wheeler with *P. polifolia* under *P. phyllicifolia* 2 Rae,
1/2 Druce *et al.*, 3 ABS AK 24452 (1 or 2)
Pomaderris kumeraho 1, 2, 3, 5 Wheeler AK 24456 (1 or 2), 43702 (3)
Pomaderris paniculosa var. *novae-zelandiae* (*P. oraria* var. *novae-zelandiae*) included by
Wheeler under *P. edgerleyi* 1/2 Druce *et al.*, 3 ABS AK 229055 (1); AKU 17299 (1)
Pomaderris prunifolia var. *edgerleyi* 1, 2, 3, 5 Wheeler AK 138437 & 150951 (2)
Pomaderris polifolia 1, 2, 3, 5 included by Wheeler with *P. ericifolia* (1/2 records doubted
by Druce *et al.* 1979), I de Lange (ultramafic scree, 1991), obviously a very rare species
at North Cape (one AK voucher from R. Michie's garden ex N. Cape: AK 217228-9),
AK 229545 (1)
- **Portulaca oleracea* 1 or 2 Parris AK 129077 [1970]
Pouteria costata (*Planchonella novo-zelandica*) 0 Wheeler, 1 Druce *et al.*, 4 Beever (H)
AK 59363 (1), 176601 (4)
Pratia angulata 6, 7 Wheeler
- **Prunella vulgaris* 2, 3 Beever & Jane, 6 ABS [1966]
Pseudognaphalium luteoalbum agg. (*Gnaphalium luteoalbum*) 4 Wheeler, 2 Johnstone,
1 Druce *et al.*, 9 Wright & Cameron, 3 ABS CHR 326168
Pseudopanax arboreus (*Nothopanax arboreum*) 4 Wheeler
Pseudopanax crassifolius 4 Wheeler
Pseudopanax lessonii s.s. 1, 2 (not on serpentine) P. J. Bellingham & de Lange (*pers. comm.*, 1996)
CHR
Pseudopanax aff. *lessonii* (predominantly a serpentine endemic) 1, 2, 4 Wheeler, 3 ABS (also
collected at Spirits Bay by de Lange: AK 229532) AK 24454 (1 or 2), 165548 (1/2)
Ranunculus acaulis 7 Wheeler AK 128004, 220882
Ranunculus reflexus (*R. hirtus*) 4 Wheeler, 5 or 8 Wright (H) AK 151239 (5 or 8)
- **Ranunculus sardous* 5 ABS AK 224116 [1995]
Ranunculus urvilleanus 5 ABS AK 225004
Rhabdothamnus solandri 4 Wheeler, 9 Adams AK 138440 & 176596 (4)
Rubus cissoides 4 Wheeler, 5 ABS
- **Rumex acetosella* 8 Wheeler [1959-60]
**Rumex brownii* (*R. flexuosus* 0 Wheeler) 1/2 Wright (H), 9 Wright & Cameron,
7 ABS AK 151251 [?1865-66 (Buchanan & Kirk 1869: 239), 1979]
**Rumex conglomeratus* 6 Parris AK 127999 [1970]
**Sagina apetala* 7 Wheeler [1959-60]
**Salsola kali* 8 Beever & Jane AK 208554 [1966]
Samolus repens var. ? *strictus* 7 Wheeler, 1 (near Titirangi Point) ABS
Sarcocornia quinqueflora (*Salicornia australis*) 1 Wheeler, 9 Wright & Cameron
Schefflera digitata 4 Wheeler
Scleranthus biflorus 1 or 2 Powell, 7 Wheeler AK 26466 & 44760-61 (1 or 2)
Selliera radicans 7 Wheeler AK 209114
- **Senecio bipinnatisectus* (*Erechtites atkinsoniae*) 4, 5 Wheeler, 2 Johnstone [1959-60]
**Senecio diaschides* 2 ABS AK 227022 [1995]
**Senecio jacobaea* 3 Beever & Jane [1966]
Senecio lautus 1 Wheeler, 3 Wright (H), 9 Wright & Cameron AK 138466 & 168330 (3)
**Sigesbeckia orientalis* 1/2 Wright (H) AK 165531 [1983]
**Silene gallica* 9 Wright & Cameron, 1/2 (near Titirangi Point), 7 ABS,
1 de Lange AK 229556 (1) [1995]
**Silybum marianum* 3, 4 Wheeler [1959-60]
Solanum americanum 4 Wright (H), 9 Wright & Cameron AK 138438
Solanum aviculare 3, 4 Wheeler
**Solanum linnaeanum* (*S. sodomeum*) 3 Beever & Jane, 9 Wright & Cameron [1966]
**Solanum nigrum* 4 Wheeler [1959-60]
**Solenogyne gunnii* (*Lagenophora gunnii*) 2 Wheeler [1959-60]
**Sonchus asper* 8 Parris, 9 Parrish AK 127978 [1969]
**Sonchus oleraceus* 4 Wheeler, 9 Wright & Cameron, 1 ABS [1959-60]
Sophora microphylla 4 Wheeler
Spergularia media 7 Wheeler, 9 Wright & Cameron

- **Stellaria media* 7 Wheeler, 3 Parris, 9 Wright & Cameron AK 128011 [1959-60]
Suaeda novae-zelandiae 7 Wheeler
 **Taraxacum officinale* 3, 4, 5 Wheeler [1959-60]
Tetragonia trigyna (*T. tetragonioides* 1 Wheeler), 9 Adams, 4 Wright (H), 1 Druce *et al.*,
 1/2 (near Titirangi Point), 8 ABS AK 118377 (9), 138391 (4)
 **Trifolium dubium* 6 or 7 Parris, 9 Wright & Cameron, 1/2 (near Titirangi Point),
 7 ABS AK 128028 [1969]
 **Trifolium glomeratum* 9 Wright & Cameron [1995]
 **Trifolium repens* 6 or 7 Parris, 9 Wright & Cameron, 1 (near Titirangi Point),
 7 ABS AK 128321 [1969]
 **Trifolium resupinatum* 9 Wright & Cameron, 1 (Titirangi Pt) ABS AK 224163 [1969]
Vellerophyton dealbatum 8 Wright (H) AK 151258 [1979]
 **Verbascum thapsus* 4 Wheeler [1959-60]
 **Verbena litoralis* 3 or 4 Croxall, 9 Wright & Cameron AK 128010 [1969]
Veronica plebeia 5 or 8 Parris, 3 Wright (H) (see de Lange (1996) for discussion on its native
 status) AK 138473 (3), 227136 (5 or 8)
Vitex lucens 4 Wheeler
Wahlenbergia "vernica" (*W. gracilis*) 0 Wheeler, 3 Beever & Jane, 1 Druce *et al.*, 9 Wright &
 Cameron AK 46067 (1 or 2), 221538 (1), CHR 354812-14

Monocotyledons excluding orchids & grasses (73)

- Arthropodium cirratum* 1, 2 Wheeler, 9 Wright & Cameron AK 138461 (1)
Astelia banksii 1, 2 Wheeler, 9 Adams, 3 ABS (2 forms present, ultramafic form more silvery - de
 Lange *pers. comm.*, 1996) AK 24455 (1 or 2), 118631 (9)
Astelia grandis 4 Beever, 1/2 (on serpentine/gabbro boundary) Hambly (*pers. comm.*, 1996) AK
 176615 (4), 227100 (1/2)
Astelia solandri 4 Wheeler
Astelia trinervia 4 Wheeler
Baumea articulata (*Cladium articulatum*) 2, 6, 7 Wheeler [Druce *et al.* suggests unlikely to be in
 serpentine area 2]
Baumea juncea (*Cladium junceum*) 3, 5, 6 Wheeler, 1, 1/2 Druce *et al.*, 7 ABS AK 127956 (7),
 168344 (1)
Baumea rubiginosa (*Cladium glomeratum*) 3, 6 Wheeler
Baumea tenax (*Cladium gunnii*) 6 Wheeler
Bolboschoenus fluviatilis (*Scirpus maritimus*) 0 Wheeler
Carex breviculmis 0 Wheeler, 1/2 Druce *et al.*
Carex flagellifera (*C. lucida*) 0 Wheeler
Carex inversa 5 or 6 or 7 Parris AK 127970
Carex lessoniana 6 ABS
Carex pumila 7, 8 Wheeler AK 45914 (7 or 8), 138456 (8)
Carex spinirostris 1 de Lange AK 229837
Carex testacea 9 Wright & Cameron
Carex virgata 7 Wheeler
Carex "Surville" (serpentine endemic) (*C. spinirostris* (*C. vacillans*)) 0 Wheeler, 1 Druce *et al.* 1
 Wright (H) AK 185329, 214492, 224985
CollospERMUM hastatum 4 Wheeler
 **Colocasia esculenta* 4 (near Kararoa Str.) ABS [1995]
Cordyline australis 4, 8 Wheeler, 6 Beever, 1 Druce *et al.*, 9 Wright & Cameron
 AK 176619-629 (6)
Cordyline australis x *C. banksii* 3 Wright (H) AK 168373-74
Cordyline banksii 2, 4, 8 Wheeler
Cordyline cf. *kaspar* 3 de Lange, 9 Wright & Cameron AK 222936 (3)
 **Cyperus brevifolia* (*Kyllinga brevifolia*) 0 Wheeler, 7 Parris AK 127954 [1969]
 **Cyperus polystachyos* 6 ABS AK 227112 [1995]
Cyperus ustulatus (*Mariscus ustulatus*) 6, 7 Wheeler, 9 Adams, 1 Druce *et al.*
 AK 118407 (9), 138392 (1)
Desmoschoenus spiralis 8 Wheeler

- Dianella nigra* (*D. intermedia*) 2, 3 Wheeler, 1/2 Druce *et al.*
 **Egeria densa* 7 de Lange AK 226105 [1996]
Eleocharis acuta 6 Wheeler
Eleocharis gracilis (*E. cunninghamii*) 0 Wheeler, 6 Parris AK 128037, 227110
Eleocharis neozelandica 7 ABS AK 227028
Eleocharis sphacelata 6 Wheeler
Freycinetia banksii 4 Wheeler AK 176600
Gahnia lacera 4 Wheeler, 1 Druce *et al.* AK 165518 (1)
 **Gladiolus undulatus* 2 ABS (carefully uprooted) AK 224981 [1995]
Isolepis cernua (*Scirpus cernuus*) 6, 7, 8 Wheeler, 2 Wright (H) AK 138481 (2)
Isolepis fluitans (*Scirpus lenticularis*) 5, 6 Wheeler
Isolepis inundata (*Scirpus inundatus*) 0 Wheeler, ?6 Parris AK 128383
Isolepis nodosa (*Scirpus nodosus*) 3, 6 Wheeler, 1 Druce *et al.*, 9 Wright & Cameron, 8 ABS
 **Isolepis sepulcralis* 6 ABS [1995]
 **Juncus articulatus* 6 ABS [1995]
 **Juncus bufonius* 0 Wheeler, 6 or 7 or 8 Parris AK 129057 [1970]
 **Juncus capitatus* 7 ABS AK 227027 [1995]
Juncus gregiflorus (*J. polyanthemus*) 1, 2, 3, 6 Wheeler (Druce *et al.* suggests unlikely to be on cliffs (1))
 **Juncus homalocaulis* (*J. plebeius*) 2, 3, 6 Wheeler [1959-60]
Juncus maritimus 7 Wheeler
Juncus pallidus (*J. vaginatus* Hook. f. non R.Br. 0 Wheeler), 6 or 7 Parris AK 127961
Lemna minor 6 Wheeler
Lepidosperma australe 1/2 Druce *et al.* AK 227014
Lepidosperma filiforme 1/2 Druce *et al.*, 3 ABS AK 165549 (2)
Lepidosperma laterale 2, 3, 5 Wheeler, 1/2 Druce *et al.* CHR 326177
Leptocarpus similis (*L. simplex*) 7 Wheeler, 9 Adams AK 118470 (9)
Libertia grandiflora 4 Wright AK 224992
Libertia ixioides 2, 3 Wheeler, 1 Druce *et al.* AK 168350-51 (1)
Morelotia affinis (*Gahnia gahniformis*) 2, 3, 4, 5, 6 Wheeler, 1/2 Druce *et al.* AK 70281 & 138426 (2)
 **Musa* sp. 7 de Lange (close to Carl's bach & Carl grew bananas; garden relic?) AK 226108 [1996]
 **Ottelia ovalifolia* 6 de Lange, ABS CHR 472092 [1990]
Phormium tenax (*P. colensoi*) 1, 2, 4, 6, 8 Wheeler, 2 Rae, 1/2 Druce *et al.*, 9 Wright & Cameron, 3 ABS AK 166439 (8)
Potamogeton suboblongus (*P. polygonifolius*) 6 Wheeler
Rhopalostylis sapida 4 Wheeler
Ripogonum scandens 4 Wheeler
Schoenoplectus tabernaemontani (*Scirpus lacustris*) 0 Wheeler, 6 Parris AK 127950
Schoenus apogon ? 5 Parris, 1/2 Druce *et al.*, 3, 6 ABS AK 138457 (2), 165534 (1)
Schoenus brevifolius 2 Rae, 1/2 Druce *et al.*, 3 ABS AK 138464 (2)
Schoenus maschalinus (*S. axillaris*) 0 Wheeler, 6 Parris AK 127969, 227111
Schoenus tendo 6 Wheeler, 1, 1/2 Druce *et al.* AK 168349 (1)
Schoenus tendo x ? 3 ABS (tall tussock, spikelets empty) AK 227021
Typha orientalis (*T. angustifolia*) 6 Wheeler
Uncinia uncinata (*U. australis*) 3, 4, 5 Wheeler, 1 Druce *et al.*, 1/2 ABS AK 229549
 **Yucca gloriosa* 8 (east Waikuku Beach) Benham (*pers. comm.*, 1996) [1996]

Orchids (24)

- Acianthus oblongus* (*A. reniformis*) 1/2 Druce *et al.*, 2 Forester AK 205018 (2)
Acianthus sinclairii 5 Wheeler, 4 Beever (H), 2 McCrae, 1/2 ABS AK 176609 (4)
Caladenia alata 1 Hatch & McCrae, ?9 Wright & Cameron
Caladenia minor 2 de Lange & Winch AK 229550
Corybas oblongus 4 Beever AK 176617
Corybas rotundifolia 5 Forester CHR
Gastrodia aff. *sesamoides* 4 Beever (H) AK 176612

Genoplesium pumilum (*Prasophyllum pumilum*) 0 Wheeler, 1/2 Druce *et al.* CHR 326197
Microtis parviflora 1 de Lange AK 229557, CHR 472898
Microtis unifolia 1, 2, 3 Wheeler, 5 McCrae, 9 Wright & Cameron, 6 ABS AK 227024 (7)
Orthoceras novae-zeelandiae (*O. strictum*) 3 Beever & Jane, 2 McCrae, 1/2 ABS
Pterostylis alobula Burke
Pterostylis puberula 2 Forester AK 205017
Pterostylis tasmanica (*P. plumosa*) 1 McCrae, 1/2 ABS (11 plants) AK 165544, 224161 (1/2)
Pterostylis graminea 4 Wheeler
Pterostylis trullifolia Burke
Thelymitra aemula 1, 2 McCrae, 3 ABS AK 229540 (2)
Thelymitra carnea 2, 5 McCrae, 3 ABS AK 229551 (2)
Thelymitra aff. longifolia 1, 2, 5 Wheeler, 9 Wright & Cameron, 3 ABS AK 138393 (1), 165526 (5)

Thelymitra matthewsii 2 McCrae, 1/2 ABS (8 plants) AK 225967 (photo) (1/2)
Thelymitra pauciflora 2, 5 McCrae, 3 ABS [*T. intermedia* 1,2,3,5 Wheeler]
Thelymitra pulchella 5 McCrae
Thelymitra "darkie" 2 McCrae
Thelymitra "rough leaf" 2 de Lange AK 229531

Grasses (49)

**Agrostis capillaris* 9 Wright & Cameron [1995]
 **Aira caryophyllea* s.s. 8 Parris, 2 Wright, 9 Wright & Cameron, 1/2 ABS AK 127964 [1969]
 **Aira praecox* 9 Wright & Cameron [1995]
 **Ammophila arenaria* 8 Parris AK 127952 [1970]
 **Anthoxanthum odoratum* 8 Wheeler, 9 Wright & Cameron, 1/2, 6 ABS [1959-60]
Austrofestuca littoralis (*Festuca littoralis*) 8 Powell AK 46062, 200864
 **Avena barbata* 1/2 Wright (H), 9 Wright & Cameron AK 165537, 227124 [1983]
 **Briza minor* 7 or 8 Parris, 3 Wright (H), 9 Wright & Cameron, 1/2, 6 ABS
 AK 151238 (3), 127972 (7 or 8) [1969]
 **Bromus diandrus* 0 Parris, 6 ABS AK 127962 [1969]
 **Bromus hordeaceus* 9 Wright & Cameron, 1/2 ABS AK 227122 [1995]
 **Bromus willdenowii* 9 Wright & Cameron, 5 or 7 Parris, 1/2 ABS AK 127958,
 224165 (9) [1969]
 **Cortaderia selloana* 6 ABS (c. 200 plants) AK 227025 [1995]
Cortaderia splendens (*Arundo conspicua*) 6, 8 Wheeler, 1 Druce *et al.*,
 9 Wright & Cameron AK 150165 (1), 151041 (?8)
 **Cynodon dactylon* 8 Parris, 9 Wright & Cameron AK 127968 [1969]
Dichelachne crinita 5 or 8 Parris, 1/2 Wright (H), 9 Wright & Cameron
 AK 127949 (5 or 8), 165536 (1/2)
Dichelachne micrantha (*D. sciurea*) 1 Druce *et al.* CHR 326096
 **Dichelachne rara* 1/2 ABS AK 227012 [1995]
Echinopogon ovatus 0 Wheeler, 5 or 8 Parris, 3, 1/2 Wright (H) AK 127966 (5 or 8),
 139815 (1/2)
Elymus multiflorus (*Agropyron kirkii*) 1 Druce *et al.* CHR 354802
 **Holcus lanatus* 7 or 8 Parris, 6 ABS AK 127965 [1969]
 **Hordeum murinum* subsp. *leporinum* 8 Parris AK 127971 [1969]
Isachne globosa (*I. australis*) 3, 6 Wheeler AK 127953 (6)
Lachnagrostis (*Deyeuxia*) *billardierei* 0 Wheeler, 1 Druce *et al.*, 9 Wright & Cameron, 8 ABS
Lachnagrostis filiformis (*Deyeuxia forsteri*) 0 Wheeler, 8 Ogle (Waitangi Stream)
 CHR 438276 (8)
 **Lagurus ovatus* 8 Parris AK 127960 [1969]
 **Lolium perenne* 9 Wright & Cameron, 1/2 ABS AK 138451 (1/2) [1995]
Microlaena avenacea 3, 5, 8 Wheeler
Microlaena stipoides 1/2 Druce *et al.*
Oplismenus imbecillis (*O. undulatifolius*) 3, 4 Wheeler, 1 Druce *et al.* AK 127948 (3),
 165525 (1)
 **Parapholis incurva* 9 Parrish [1993]

- **Parapholis strigosa* 9 Wright & Cameron, 1 (Titirangi Pt) ABS AK 224976 [1995]
 **Paspalum dilatatum* 9 Wright & Cameron, 1/2 ABS [1995]
Paspalum orbiculare (*P. scrobiculatum*) 2, 3, 4, 5, 8 Wheeler AK 229539
 **Paspalum vaginatum* (*Paspalum distichum* 0 Wheeler) 9 Wright & Cameron,
 1 (Titirangi Point) ABS [1995]
 **Pennisetum clandestinum* 2, 6 ABS AK 227013 (2) [1995]
Poa anceps 4, 8 Wheeler
 **Poa annua* 2,4 Wheeler [1959-60]
 **Poa trivialis* 9 Wright (field notebook record), 1 (Titirangi Point), 6 ABS [1983]
 **Polypogon fugax* 7 or 8 Parris AK 127957, 151253 [1969]
Rytidosperma biannulare 1, 1/2 Druce *et al.*, 9 Wright & Cameron AK 138425, 138442 (1)
 **Rytidosperma pilosum* (*Noto*)*Danthonia pilosa*) 4, 8 Wheeler, 1, 8 Ogle
 CHR 394227 (1) & 455155 (8) [1959-60]
 **Rytidosperma racemosum* 2 Wright (H), 1, 1/2 Druce *et al.*,
 9 Wright & Cameron AK 138441 (2) [1975]
Rytidosperma unarede (?*Danthonia semiannularis* 4, 8 Wheeler), 3 Parris, 1 Druce *et al.*
 AK 127963 & 224982 (3)
Spinifex sericeus (*S. hirsutus*) 8 Wheeler
 **Sporobolus africanus* (*S. capensis*) 3, 8 Wheeler, 9 Wright & Cameron,
 1 de Lange AK 229542 (1) [1959-60]
 **Stenotaphrum secundatum* 4, 8 Wheeler [1959-60]
Stipa stipoides (*S. teretifolia*) 7 Wheeler, 1 Druce *et al.*
 **Vulpia bromoides* 9 Wright & Cameron, 1/2 ABS AK 227119 [1995]
Zoysia pauciflora (*Z. pungens*) 0 Wheeler, 7 ABS AK 224999

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Footnote Carl's bach where Bot Soc stayed, is named after Carl Nilsson who lived there alone for more than 12 years and died 28 December 1983 (Bobby Nilsson *pers. comm.*).

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Appendix 1. Unconfirmed North Cape Records from last century, recorded by Wheeler (see introduction under community 0)

Ferns & Fern Allies

- Asplenium polyodon* (*A. falcatum*) Buchanan & Kirk 1869: 246
- Blechnum* (*Lomaria*) *banksii* Buchanan & Kirk 1869: 246
- Blechnum chambersii* (*Lomaria lanceolata*) Buchanan & Kirk 1869: 246
- Blechnum* (*Lomaria*) *discolor* Buchanan & Kirk 1869: 246
- Blechnum filiforme* (*Lomaria filiformis*) Buchanan & Kirk 1869: 246; Cheeseman 1896: 381 "between Tapotopoto Bay and the North Cape"
- Blechnum* (*Lomaria*) *fraseri* Buchanan & Kirk 1869: 246
- Grammitis* (*Polypodium*) *billardierei* Buchanan & Kirk 1869: 247
- Histiopteris* (*Pteris*) *incisa* Buchanan & Kirk 1869: 246; Cheeseman 1896: 381 "and near Tom Bowline's Bay"
- Lycopodium volubile* Buchanan & Kirk 1869: 247
- Lygodium articulatum* Buchanan & Kirk 1869: 247
- Schizaea bifida* recorded by mistake by Wheeler (1963: 68)? No earlier North Cape records located.
- Tmesipteris tannensis* s. lat. (*T. forsteri*) Buchanan & Kirk 1869: 247 Prior to the split of the species; probably *T. elongata* or *T. lanceolata*

Gymnosperms

- Dacrycarpus* (*Podocarpus*) *dacrydioides* Buchanan & Kirk 1869: 245
- Dacrydium cupressinum* Buchanan & Kirk 1869: 245
- Podocarpus totara* Buchanan & Kirk 1869: 245
- Prumnopitys ferruginea* (*Podocarpus ferrugineus*) Buchanan & Kirk 1869: 245
- Prumnopitys taxifolia* (*Podocarpus spicatus*) Buchanan & Kirk 1869: 245

Dicotyledons

- Alectryon excelsus* Buchanan & Kirk 1869: 242
Aristolelia serrata (*A. racemosa*) Buchanan & Kirk 1869: 242
Callitriche muelleri Kirk 1870: 172
Chenopodium glaucum (*C. ambiguum*) Buchanan & Kirk 1869: 244
Clematis forsteri (*C. colensoi*) Buchanan & Kirk 1869: 242
Coprosma arborea recorded by mistake by Wheeler (1963: 76)? No earlier North Cape records located.
Cotula australis Buchanan & Kirk 1869: 244
Elaeocarpus dentatus Buchanan & Kirk 1869: 242
Epilobium glabellum Buchanan & Kirk 1869: 243. Not present north of Mt Tarawera (Webb *et al.*, 1988)
Epilobium nummulariifolium Buchanan & Kirk 1869: 243. Raven & Raven (1976: 280) show the northern limit for this species is near Kaitaia
Gunnera monoica Buchanan & Kirk 1869: 243
Hebe (*Veronica*) *diosmifolia* Buchanan & Kirk 1869: 244
Hebe stricta var. *macroura* (*Veronica macroura*) Buchanan & Kirk 1869: 244
Lepidium oleraceum Cheeseman 1896: 366 "cliffs near North Cape". How near? No Northland Cheeseman specimens exist in AK of *L. oleraceum*
Lophomyrtus (*Myrtus*) *bullata* Buchanan & Kirk 1869: 243
Meliclytus macrophyllus Buchanan & Kirk 1869: 242
Meliclytus novae-zelandiae (*Hymenanchera crassifolia*, *H. latifolia* var. *tasmanica*, *H. latifolia*) Buchanan & Kirk 1869: 242; Kirk 1870: 172; Cheeseman 1896: 366 "between Tom Bowline's Bay and Hooper's Point"
Metrosideros robusta Buchanan & Kirk 1869: 243
Mimulus repens recorded by mistake by Wheeler (1963: 78)? No earlier North Cape records located, although it does exist at Spirits Bay.
Olearia rani (*O. cunninghamii*) Buchanan & Kirk 1869: 243
Olearia solandri Buchanan & Kirk 1869: 243
**Polygonum aviculare* Buchanan & Kirk 1869: 244
Polygonum salicifolium (*P. decipiens*) Buchanan & Kirk 1869: 244
Pseudopanax (*Panax*) *edgerleyi* Buchanan & Kirk 1869: 243
Rorippa palustris (*Nasturtium palustre*) Buchanan & Kirk 1869: 242
Senecio hispidulus / *scaberulus* (*Erechtites scaberula*) recorded by mistake by Wheeler (1963:77)? Only early record we located was by Cheeseman (1896:372) "generally distributed" referring to the whole of the N. Cape District (see Figure 2)
Senecio quadridentatus (*Erechtites quadridentata*) Cheeseman 1896:372 "generally distributed" (see comment for above taxon)
Syzygium (*Eugenia*) *maire* Buchanan & Kirk 1869: 243
Weinmannia silvicola Buchanan & Kirk 1869: 243; Rattenbury in Johnstone (1969: 7) records an endemic undescribed variety from North Cape. Presumed a mistake.

Monocotyledons

- Baumea* (*Cladium*) *teretifolia* Buchanan & Kirk 1869: 245
Cordyline pumilio Buchanan & Kirk 1869:245
Isolepis prolifer Buchanan & Kirk 1869: 245
Juncus planifolius Buchanan & Kirk 1869: 245
Machaerina (*Cladium*) *sinclairii* Buchanan & Kirk 1869: 245
Triglochin striata (*T. triandrum*) Buchanan & Kirk 1869: 245
Zostera capricorni or *Z. muelleri* (*Z. marina*) Buchanan & Kirk 1869: 245

Appendix 2. Dubious & Excluded Records not included in the synonymy in the main list

Ferns

Doodia aspera Western end of Tom Bowling Bay, above the sand & therefore just out of our North Cape area. Carse & Mathews AK 115362 & 197498.

Dicotyledons

Hebe adamsii 1 and 2 Wheeler (1963: 78). This species has been reinstated by Garnock-Jones & Clarkson (1994) but does not extend to North Cape. Presumed in error for *H. macrocarpa* var. *brevifolia*?

Hebe speciosa see de Lange & Cameron (1992:12).

Mycelis (Lactuca) muralis 1/4 (Beever & Jane 1967: 148). Absent from Northland (Webb *et al.*, 1988). Mistake for *Sonchus* or *Senecio* spp.?

Pseudopanax (Neopanax) simplex 4 Wheeler (1963:75). Not present in Northland.

**Viburnum* seedlings 2 Johnstone (1967: 143). No *Viburnum* species have been recorded naturalised in northern New Zealand (Webb *et al.*, 1988)

Monocotyledons

Chionochloa bromoides 9 Parrish, see Wright & Cameron (1996) for a discussion regarding this record.

Juncus gregiflorus/usitatus (J. polyanthemus) 1, 2, 3, 6 Wheeler (1963: 79). Because this widespread record is not supported by anyone else and because Wheeler did not record the locally common *Lepidosperma filiforme*, we suspect it was recorded in error for *L. filiforme* in communities 1,2,3. Also see comment by Druce *et al.* (1979: 202) under *J. gregiflorus*.

Juncus nodosus 6,7 Wheeler (1963: 79). No such taxon exists. Mistake for *Isolepis (Scirpus) nodosa*? But this species was separately recorded by Wheeler.

Appendix 3. Main Collectors Of North Cape Herbarium Specimens Located In AK & AKU, including collection year(s) and number of specimens

| | | |
|--------------------------------|------------------------------|-------------------|
| Adams, G. P. | 1968 | AK (21) |
| Adams, J. | 1896 | AK (14) |
| Beever, R. E. | 1986, 1987 | AK (28) |
| Brown, E. A. | 1974, 1979, 1982 | AKU (16) |
| Cameron, E. K. | 1971, 1974, 1985, 1987, 1995 | AK (40), AKU (9) |
| Carse, H. & Matthews, H. B. | 1920, 1926, 1927 | AK (7) |
| Cheeseman, T. F. | 1896, 1897 | AK (26) |
| Cooper, R. C. | 1949 | AK (25) |
| Croxall, J. P. | 1969, 1970 | AK (8) |
| Croxall, J. P. & Parris, B. S. | 1969, 1970 | AK (2) |
| de Lange, P. J. | 1990, 1991, 1992, 1995, 1996 | AK (68), AKU (6) |
| Forester, L. J. | 1990, 1992 | AK (4) |
| Gardner, R.O. | 1973, 1979 | AK (13) |
| Hynes, P. | 1957, 1959 | AK (32) |
| Orchard, A. E. | 1972 | AK (6) |
| Parris, B. S. | 1969, 1970 | AK (75) |
| Powell, H. E. | 1950, 1952 | AK (34) |
| Taylor, G. A. | 1990 | AK (9) |
| Wright, A. E. | 1975, 1979, 1983, 1995 | AK (176), AKU (7) |

Table 1. Vascular Flora Totals for North Cape

| Plant group | Indigenous | Adventive | Totals |
|---------------------|-------------------|------------------|---------------|
| Ferns & fern allies | 57 | - | 57 |
| Gymnosperms | 2 | - | 2 |
| Dicotyledons | 168 | 83 | 251 |
| Monocotyledons | 103 | 43 | 146 |
| TOTALS | 330 | 126 | 456 |

Ants and *Pomaderris* seeds

Rhys Gardner

While standing around at the edge of a piece of kanuka scrub in Green Bay last summer I happened to notice some ants (the ordinary black unvouchered kind) dragging bits of plant into their nest. This material proved to be seeds and the inner parts of capsules (cocci) that still contained seeds. They belonged to *Pomaderris kumeraho*. The seeds are c. 2 mm long, near-black or (as in Moore & Irwin 1978) mottled black and brown. At their lower end they have a fleshy cushion-like pale outgrowth, the elaiosome, which would be the part eaten by the ants - the rest of the seed would be discarded and so enter the seed bank.

In a notable article Berg (1975) examined the subject of ant-dispersed plants in Australia. He listed *Pomaderris* as one of the genera all of whose species had seeds that were taken by ants. Also listed is *Phebalium*. Our species, *Phebalium nudum*, does have a elaiosome-like structure, though it seems (in dry material) to be rather thin. The seeds are twice as large as those of kumarahou but I suppose would be no trouble to an ant platoon.

The seeds of kumarahou and some other native species of *Pomaderris* are shown in Figure 1. I have not been able to illustrate *P. paniculosa* subsp. *novae-zelandiae*, *P. phyllicifolia* var. *polifolia*, *P. prunifolia*, nor the naturalized *P. aspera*. This is because although there is abundant material at AK none of it has ripe fruit; collectors please take note.

References

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Figure 1. *Pomaderris* spp., seeds and cocci. Ventral aspect. Operculum shown attached or free or lacking. x 2