

APPENDIX I: Flora of Ngawahakarara Ecological Area. The following list has been compiled from the survey data of Keenan (1985) and Brady (in prep). Consequently, it should not be regarded as being fully comprehensive.

note: common names cited are those used in the text. Where no common name is known the type of plant (fern, shrub etc) has been stated

NATIVE SPECIES

Class : PSILOPSIDA

Tmesipteris tannensis

Class : LYCOPSIDA

Lycopodium billardieri

A clubmoss

Lycopodium varium

Hanging clubmoss

Class : FILICOPSIDA

Leptopteris hymenophylloides

Heruheru; Grape fern

Gleichenia circinata

Tangle fern

Sticherus cunninghamii

Tapuwae-kotuku; Umbrella fern

Hymenophyllum dilatatum

A filmy fern

Hymenophyllum sanguinolentum

A filmy fern

Cardiomanes reniform

Kidney fern

Dicksonia squarrosa

Wheki; Rough tree fern

Dicksonia fibrosa

Wheki-ponga; a tree fern

Alsophila dealbata

Ponga; a tree fern

Alsophila medullaris

Mamaku; Black tree fern

Alsophila smithii

Katote; Soft tree fern

Pyrrosia serpens

Leather-leaf fern

Anarthropteris lanceolata

A fern

Phymatosorus diversifolius

Kowaowao; Hounds' tongue fern

Phymatosorus scandens

A fern

Ctenopteris heterophylla

A fern

Grammitis billardieri

A fern

Hypolepis rugosula

A fern

Histiopteris incisa

Mata; Waterfern

Pteris macilentia

A fern

<u>Asplenium bulbiferum</u>	Mauku; Hen and chicken fern
<u>Asplenium falcatum</u>	A fern
<u>Asplenium flaccidum</u>	Raukatauri; Hanging spleenwort
<u>Asplenium Polyodon</u>	Petako; sickle spleenwort
<u>Blechnum capense</u>	Kiokio; palm-leaf fern
<u>Blechnum discolor</u>	Piupiu; Crownfern
<u>Blechnum filiforme</u>	A fern
<u>Blechnum fluviatile</u>	Kiwakiwa
<u>Blechnum nigrum</u>	Black hardfern
<u>Blechnum penna-marina</u>	Little hardfern
<u>Blechnum procerum</u>	A fern
<u>Polystichum vestitum</u>	Punui; Prickly shieldfern
<u>Polystichum richardii</u>	A shieldfern
<u>Rumohra adiantiformis</u>	Leathery shieldfern
<u>Rumohra hispida</u>	A shieldfern

Class : SPERMATOPSIDA

Subclass : GYMNOSPERMAE

<u>Dacrycarpus dacrydioides</u>	Kahikatea; white pine
<u>Prumnopitys ferruginea</u>	Miro
<u>Podocarpus hallii</u>	Halls' totara
<u>Podocarpus totara</u>	Totara
<u>Dacrydium cupressinum</u>	Rimu

Subclass : ANGIOSPERMAE

Order : MONOCOTYLEDONES

<u>Astelia nervosa</u>	A lily
<u>Collosperrum hastatum</u>	A lily
<u>Collosperrum microspermum</u>	A lily
<u>Ripogonum scandens</u>	Kareao; Supplejack
<u>Cordyline australis</u>	Cabbage tree
<u>Libertia ixioides</u>	Mikoikoi; native iris
<u>Freycinetia bankseii</u>	Kiekie
<u>Thelymitra venosa</u>	A sun orchid
<u>Prasophyllum colensoi</u>	An onion-leaved orchid
<u>Earina autumnalis</u>	An orchid

Earina mucronata
Uncinia unciniata

Bamboo orchid
Hookgrass

Family : GRAMINEAE

Cortaderia fulvida
Microlaena avenacea

Toetoe
Bush rice-grass

Order : DICOTYLEDONES

Pseudowintera axillaris
Pseudowintera colorata
Beilschmiedia tawa
Hedycarya arborea
Laurelia novae-zelandiae
Ranunculus hirtus
Caltha novae-zelandiae
Clematis forsteri
Viola cunninghamii
Melicytus ramiflorus
Stellaria parviflora
Muelenbeckia australis
Epilobium alsinoides
Fuchsia excorticata
Knightsia excelsa
Metrosideros diffusa
Metrosideros fulgens
Metrosideros perforata
Metrosideros robusta
Aristotelia serrata
Weinmannia racemosa
Carpodetus serratus
Quintinia acutifolia
Rubus australis
Rubus cissoides
Pennantia corymbosa
Schefflera digitata
Pseudopanax anomalus
Pseudopanax arboreum
Pseudopanax crassifolium

Horopito; lowland peppertree
Horopito; highland peppertree
Tawa
Porokaiwhiri; Pigeonwood
Pukatea
Hairy buttercup
NZ marsh-marigold
Clematis
White violet
Mahoe; Whiteywood
Native chickweed
Pohuehue
A willowherb
Kotukutuku; Tree fuchsia
Rewarewa; NZ honeysuckle
Climbing rata
Climbing rata
Climbing rata
Northern rata
Makomako; wineberry
Kamahi
Putaputaweta; marbleleaf
A tree
Tataramoa; bushlawyer
Tataramoa; bushlawyer
Kaikomako
Pate
A shrub
A tree fivefinger
Horoeka; Lancewood

<u>Pseudopanax edgerleyi</u>	. A tree
<u>Pseudopanax simplex</u>	Haumakarora; Mountain panax
<u>Griselinia littoralis</u>	Papauma; Broadleaf
<u>Hydrocotyle moschata</u>	A pennywort
<u>Cyathodes fasciculata</u>	Soft mingimingi
<u>Myrsine salicina</u>	Toro
<u>Nestegis cunninghamii</u>	Black maire
<u>Nestegis lanceolata</u>	White maire
<u>Geniostoma ligustrifolium</u>	Hangehange
<u>Parsonsia heterophylla</u>	Kaihua; native jasmine
<u>Coprosma australis</u>	Raurekau
<u>Coprosma ciliata</u>	A shrub
<u>Coprosma foetidissima</u>	Stinkwood
<u>Coprosma parviflora</u>	A small tree
<u>Coprosma propinqua</u>	A shrub
<u>Nertera depressa</u>	A prostrate plant
<u>Olearia rani</u>	Heketara
<u>Brachyglottis repanda</u>	Rangiora

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Appendix II

TERRESTRIAL VERTEBRATES

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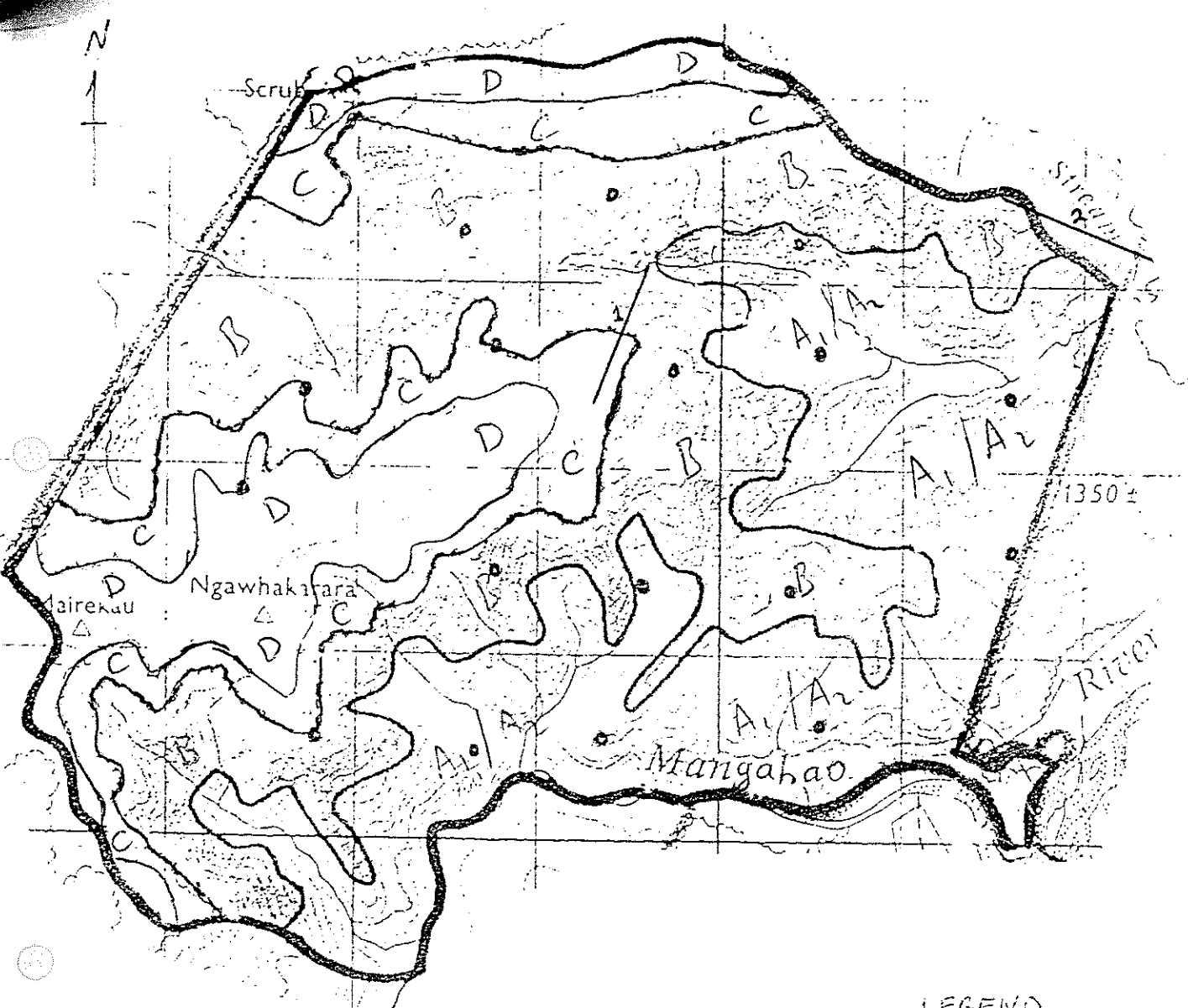
NATIVE

Subphyllum : TETRAPODA

Class : AVES

<u>Circus approximans</u>	Kahu; harrier-hawk
<u>Falco novaeseelandiae</u>	Karearea; NZ falcon
<u>Hemiphaga novaeseelandiae</u>	Kereru; NZ pigeon
<u>Chalcites lucidus</u>	Piwiwharauora; shining cuckoo
<u>Eudynamis taitensis</u>	Koekoeka; long-tailed cuckoo
<u>Halcyon sancta</u>	Kotare; kingfisher
<u>Acanthisitta chloris</u>	Titipounamu; rifleman
<u>Rhipidura fuliginosa</u>	Piwakawaka; fantail
<u>Petroica macrocephala subsp.</u>	Miromiro; NI tomtit
<u>Mohoua albicilla</u>	Popokatea; whitehead
<u>Gerygone igata</u>	Riorio; grey warbler
<u>Anthornis melanura</u>	Korimiko; bellbird

AWHAKARARA ECOLOGICAL AREA



Positions of Forest Survey Plots

1983 Forest "recces" plots (Keenan 1985)
 Insect Lines (Austin 1974; Bell 1976; Colwell 1985;
 Brady 1983; Brady in prep.)

- 3 "recces"; 3 forest plots
- 3 "recces"; 3 forest plots

LEGEND

- A₁ RIMU / KAMAHU FORESTS
- A₂ RIMU / SHRUB-HARDWOOD FORESTS
- B MIRO / SHRUB-HARDWOOD FORESTS
- C PEPPERWOOD-DOMINATED SHRUBLANDS
- D SUBALPINE SHRUBLANDS

Figure 4.
 FOREST-TYPE DISTRIBUTION
 (Adapted after Nicholls 1972)

Scale
 0 1 2 km

SUMMARY

Ngawhakarara Ecological Area situated about 13 km east of Shannon is part of the South Manawatu Gorge Ecological District, and contains tributaries of the Mangahao and Tokomaru Rivers. It covers approximately 1677 ha.

The area's climate is characterised by strong, persistent winds and moderate rainfalls. Winds are predominantly west to northwesterly, and yearly rainfalls average 2.4 -3.4 metres.

Exposures of only one rock-type - the Ruahine Greywacke Group - are present in the area. These are remains of an old peneplain surface uplifted during the Pliocene and early Pleistocene periods.

Forests in the area are representative of the southern end of the Manawatu Gorge Ecological Region's shrub-hardwood forest belt. These highly modified forests, resulted from mass degradation of tall forests that once covered mid-upper altitude slopes. They offer excellent opportunities for research into forest regeneration.

A variety of invertebrates have been recorded from the area, and include representatives from 15 orders. Beetles (COLEOPTERA) appeared the most diverse order and are represented by more than 13 different species.

Birdlife in the area appears dominated by insect-eaters - the most common being the grey warbler, whitehead, and the tomtit.

The introduced species that give most cause for concern in the area are red deer, ~~brush-tailed~~ possum, ship rat and blackbird.