

KOHI POINT SCENIC RESERVE AND MOKORUA BUSH SCENIC RESERVE PEST PLANT SURVEYS, 2020



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KOHI POINT SCENIC RESERVE AND MOKORUA BUSH SCENIC RESERVE PEST PLANT SURVEYS, 2020

Contract Report No. 5441

June 2020

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Bay of Plenty Regional Council

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Wildland Consultants Ltd

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1. INTRODUCTION

Pest plant surveys of Mokorua Bush Scenic Reserve (c.237 hectares) and Kohi Point Scenic Reserve (c.193 hectares) were undertaken by Wildland Consultants Ltd in May/June 2020. The purpose of the pest plant surveys was to identify the current locations and extent of naturalised plant infestations within the reserves and assess the effectiveness of pest plant control work. At the start of the project, Bay of Plenty Regional Council provided Wildland Consultants with a phone app with a dropdown menu containing 72 pest plant species for which data was to be collected.

2. METHODS

2.1 Field survey

The Mokorua Bush Scenic Reserve pest plant survey was carried out across six days between 21 May and 10 June. The Kohi Point Scenic Reserve pest plant survey was carried out over seven days between 7 May and 12 June. For the purpose of this project, pest plant species are:

- All species identified and listed in the app by the client prior to the project commencing (Appendix 1, Table 1).
- All exotic species observed during the survey that are considered to threaten indigenous species and/or indigenous habitats (Appendix 2, Table 2).

All internal walking tracks (approximate walking track GIS data sourced from Local Government Geospatial Alliance), bait station lines and accessible boundaries of Mokorua Bush Scenic Reserve and Kohi Point Scenic Reserve were assessed (see Figures 1 and 2). Along each survey line (walking trail, bait station line and accessible boundaries), data on the location and extent of pest plant species was collected. Other naturalised exotic plant species which will not be prioritised for control, such as Yorkshire fog (*Holcus lanatus*), lawn daisy (*Bellis perennis*) and veldt grass (*Ehrharta erecta*), were not mapped. All exotic species that have been recorded from the survey areas are listed in Appendix 3. The client also requested that pest animal species be recorded when observed, including species such as rainbow lorikeet (*Trichoglossus haematodus*).

2.2 Data collection

A data collection application (app) was developed by the Regional Council and provided to Wildland Consultants for use during the survey. For each pest plant species (seedlings and mature plants) visible from the survey line, a GPS point was recorded in the app. The app automatically populated the “Pest Plant Reference Layer” held by Bay of Plenty Regional Council. The fields in the app are:

- Species
- Length
- Width

- Comments
- Photos and files

2.2.1 Species

Pest Plants

- Pest plant species (common names) identified by the client as requiring surveying had been uploaded to the app (see Appendix 1, Table 1) before it was provided to Wildland Consultants and appeared in a dropdown menu. Fourteen species were added to the dropdown menu in the app following day two of the survey (a list of these species was provided to the Regional Council at the end of Day 1).

Other Species of Interest - Pest Plants

- For species that were not listed in the dropdown menu but were considered to be pest plants, the ‘other species of interest’ option in the dropdown menu under species was used when the identity of the species was known in most instances, and the species name was recorded in the comments field (see Appendix 1, Table 1 for a list of other species for which location data was captured during the survey). For unidentified pest plants the “unknown invasive” option was used in eight instances, although three of these records were subsequently identified and the identity of the pest plant was then recorded in the comments field.
- There were four locations along the boundary of Kohi Point Scenic Reserve where multiple “garden escapes” were present; in these instances, multiple species (up to 10) were recorded for a single location under the ‘other species of interest’ option, with the species listed in the comments field.
- Location data on Formosan lily (*Lilium formosanum*; classed as a restricted pest in the Bay of Plenty Regional Pest Management Plan (Bay of Plenty Regional Council 2011)) and cape gooseberry (*Physalis peruviana*) were collected during the first day of the survey; however, it was decided in consultation with the client not to continue to collect location data for these species. Cape gooseberry was not considered to be a pest plant species that would be controlled at these sites. Formosan lily is present at Kohi Point and Mokorua Bush Scenic Reserve, but is only visible above ground seasonally.
- Indigenous species which were outside their natural range and have been planted in the study area were recorded when seen during the survey. These included kauri (*Agathis australis*) and kāpuka (*Griselinia littoralis*).

Other Species of Interest - Threatened Species

- Location information on threatened indigenous species was also captured under the ‘other species of interest’ option in the dropdown menu, details were recorded in the comments field.



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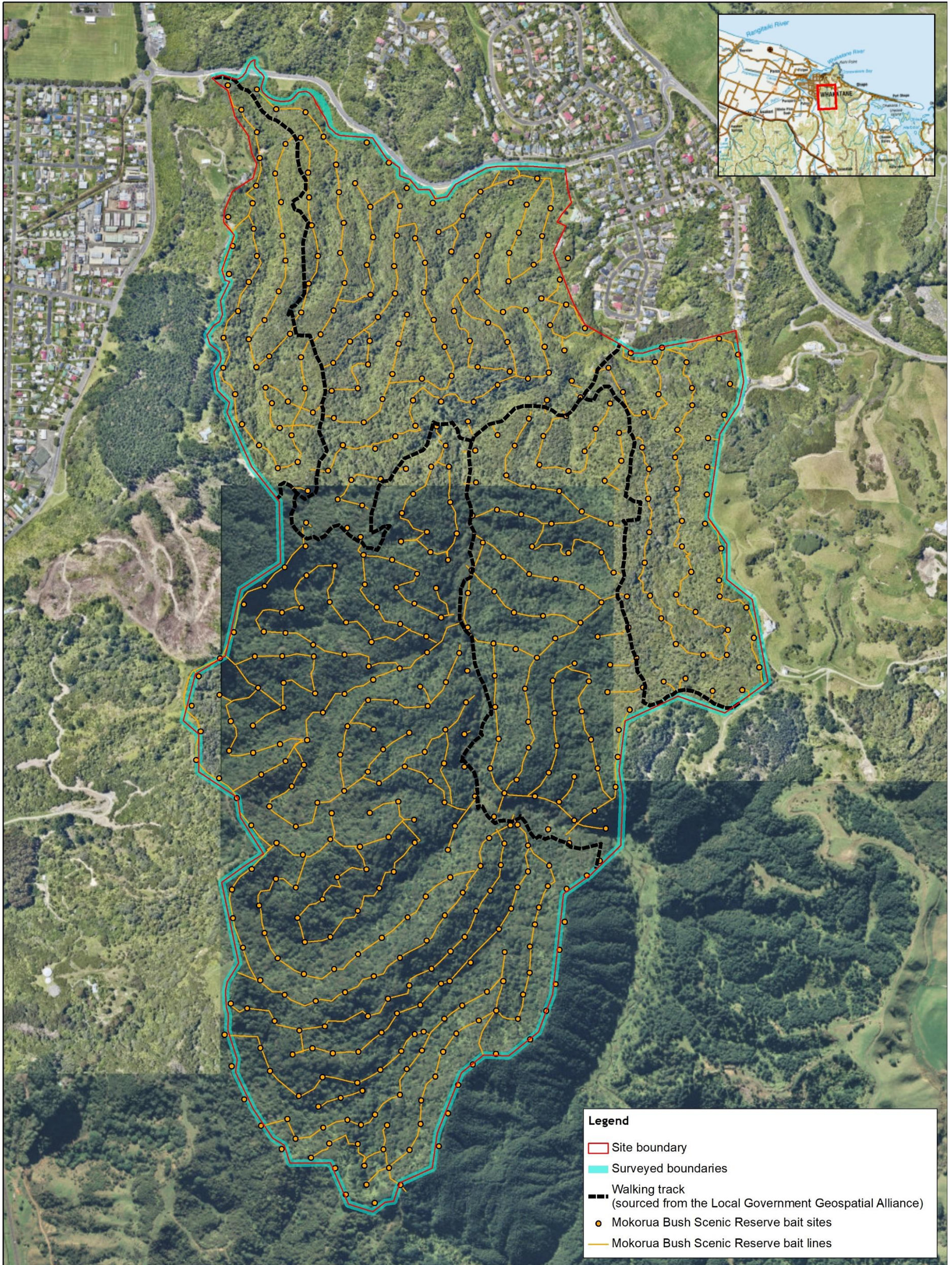
Report: 5441
 Client: BOPRC
 Ref: 01 2148
 Path: E:\gis\Wakorua Bush\mxd\KohiPoint_WalkingTrails.mxd

Figure 1. Walking tracks, boundaries and bait station lines surveyed for pest plant species at Kohi Point Scenic Reserve, 2020.



Wildlands
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Scale: 1:10,000
 Date: 19/06/2020
 Cartographer: LD
 Format: A3R



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Report: 5441
 Client: BOPRC
 Ref: 01 2148
 Path: E:\gis\Wokorua Bush\mxd\
 File: MokoruaBush_WalkingTrails_P.mxd

Figure 2. Walking tracks, boundaries and bait station lines surveyed for pest plant species in Mokorua Bush Scenic Reserve, 2020.

Wildlands
 www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:10,000
 Date: 19/06/2020
 Cartographer: LD
 Format: A3

2.2.2 Length

- The length of each infestation was recorded in this field.
- For infestations of pest plant species greater than 10 metres long, a new location point was initially recorded every 10 metres along the survey line. However, this method was considered to be impractical for nine very common pest plant species, which often occurred scattered along much of the length of a survey line. Location points for these species were recorded every 100 metres or more: black wattle (*Acacia mearnsii*), blackberry (*Rubus fruticosus* agg.), Chinese privet (*Ligustrum sinense*), cotoneaster (*Cotoneaster glaucophyllus*), gorse (*Ulex europaeus*), pampas (*Cortaderia selloana*), privet (*Ligustrum lucidum*), Sydney golden wattle (*Acacia longifolia*) and flowering cherry (*Prunus* sp.), and the total length of the infestation was recorded in the app. This method was adopted to make efficient use of time. Part way through the survey, the client identified 11 key pest plant species for which a location point was to be captured for every 10 metres of infestation (these are listed in Appendix 1, Table 1). However, location points for one of these species, tradescantia (*Tradescantia fluminensis*), were not captured every 10 metres of infestation prior to this change in methodology. For all 101 remaining species, where infestations occurred, points were recorded every 10 metres along the survey line where that species occurred. The app automatically recorded one metre if no length was entered.

2.2.3 Width

- The width of the infestation visible from the track was recorded in metres. The app automatically recorded 1 metre if no width was entered.

2.2.4 Comments

- The comments field is provided in the app to record additional notes such as species names for plants listed under ‘other species of interest’ in the species field (for detail see Section 2.2.1 above).

2.2.5 Photographs and files

- Photographs of many species (pest plants and threatened plant species) were captured in the app under the photos and files field.

3. FINDINGS

Location data for 110 pest plant species was collected at 4,845 points (2897 in Kohi Point Scenic Reserve and 1948 in Mokorua Bush Scenic Reserve) over 13 days during May/June 2020. These species are listed in Appendix 1.

The following Threatened and At Risk plant species were found during the survey:

- *Pimelea tomentosa* (Threatened-Nationally Vulnerable in de Lange *et al.* 2018), 13 plants were found in Kohi Point Scenic Reserve and three plants were found in Mokorua Scenic Reserve.
- A new population of dwarf mistletoe (*Korthalsella salicornioides*; Threatened-Nationally Critical) was found in Kohi Point Scenic Reserve hemiparasitic on mānuka at NZTM E1953144 N5793023. This population comprised one group of approximately 10 mānuka plants supporting more than 200 *Korthalsella salicornioides* and a smaller group of approximately five mānuka supporting more than 100 *Korthalsella salicornioides*. This is a separate population to the population which occurs alongside the Kohi Point walking track, which was also recorded in the app.
- New Zealand spurge (*Euphorbia glauca*; At Risk-Declining) at Kohi Point Scenic Reserve was planted on the face above the walking track at the western end of Ohope Beach.
- Kōkihi (*Tetragonia tetragonioides*; At Risk-Naturally Uncommon) also planted in Kohi Point Scenic Reserve on the face above the walking track at the western end of Ohope Beach.

Photographs of the Threatened or At Risk species at each location were captured in the app (see Appendix 3, Figures 3 and 4 for locations of Threatened and At Risk plant species found in the reserves).

No rainbow lorikeet were observed during the survey.

4. LIMITATIONS OF THE DATA

- The methods were refined as the project proceeded, so data collected at the start of the project varies to data collected after the methods were refined and expanded in consultation with the client.
- No time was allocated to allow the GPS to acquire satellites at each location, as this would have greatly increased the length of the project. This could have resulted in lower accuracy of recorded GPS coordinates.
- No directional information (such as identifying which side of the survey line the species occurred on) was required as extent of infestation was the client focus for this survey, rather than exact location.
- The timing of the survey meant that blue morning glory was at the end of its flowering season and therefore less conspicuous.
- Monkey apple (*Syzygium smithii*), which has been previously recorded in the Taneatua Ecological District (Beadel *et al.* 2012), is present in the Kohi Point survey area. The infestation of monkey apple may be more extensive than

recorded during this survey, as a few specimens may have been recorded as tree privet (*Ligustrum lucidum*) at the start of the survey.

- The app does not capture the GPS tracks of the surveyor.
- There is no search function within the app to search records.

5. SUGGESTIONS FOR FUTURE SIMILAR PROJECTS

- Add option into the app to GPS track the survey, or capture a track with a GPS.
- Develop list of pest plant species known to be present in the survey area or very likely to be present and incorporate in dropdown list on the app prior to field survey.
- Add search function to app to search records.

ACKNOWLEDGMENTS

Would like to thank Shay Dean and Sam Stephens (Bay of Plenty Regional Council) for initiating this project and for continued support during this project, and Scott Sambell for support with the app.

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PEST PLANT SPECIES WHICH ARE LISTED IN THE APP AND FOR WHICH DISTRIBUTION POINTS WERE CAPTURED IN THE APP MAY/JUNE 2020

Legend

1. Species listed by Bay of Plenty Regional Council in the dropdown menu prior to field survey.
2. Fourteen species provided to the Regional Council to add to the app dropdown menu on Day 3 by Wildland Consultants.
3. Key pest plant species (every 10 metres of infestation recorded).
4. Species recorded under "Other species" in the app.
5. One species provided to the Regional Council to add to the dropdown menu.

Bold Pest plant species for which distribution points were captured in the app May/June 2020.

The App lists common names in the dropdown menu, therefore this list reflects the app, and lists species common names alphabetically.

Common Name	Scientific Name	Kohi Point	Mokorua Bush
Acer ⁴	<i>Acer</i> sp.		✓
African feathergrass ¹	<i>Cenchrus macrourus</i>		
Agapanthus ²	<i>Agapanthus praecox</i>	✓	✓
Alder ⁴	<i>Alnus glutinosa</i>	✓	✓
Alligator weed ¹	<i>Alternanthera philoxeroides</i>		
Alstroemeria ⁴	<i>Alstroemeria</i> sp.	✓	
Aluminium plant ²	<i>Galeobdolon luteum</i>	✓	
Angel's trumpet ¹	<i>Brugmansia candida</i>	✓	
Apple of Sodom ¹	<i>Solanum linnaeanum</i>		
Arctotis ⁴	<i>Arctotis stoechadifolia</i>		✓
Aristea ⁴	<i>Aristea ecklonii</i>		✓
Arum lily ¹	<i>Zantedeschia aethiopica</i>		✓
Asiatic knotweed ¹	<i>Reynoutria japonica</i>		
Avocado ⁴	<i>Persea americana</i>	✓	✓
Bamboo ¹	<i>Pseudosasa japonica</i>		✓
Banana passionfruit ¹	<i>Passiflora tarminiana</i>		
Banksia ¹	<i>Banksia integrifolia</i>	✓	✓
Barberry ⁴	<i>Berberis glaucocarpa</i>	✓	✓
Black wattle ¹	<i>Acacia mearnsii</i>	✓	✓
Blackberry ¹	<i>Rubus fruticosus</i> agg.	✓	✓
Bear's breeches ⁴	<i>Acanthus mollis</i>	✓	✓
Blue morning glory ^{1,3}	<i>Ipomoea indica</i>	✓	
Boneseed ¹	<i>Chrysanthemoides monilifera</i>		
Brush wattle ¹	<i>Paraserianthes lophantha</i>	✓	✓
Canna lily ²	<i>Canna indica</i>	✓	
Cape honeysuckle ²	<i>Tecomaria capensis</i>	✓	
Caper spurge ²	<i>Euphorbia lathyris</i>	✓	
Castor oil plant ⁴	<i>Ricinus communis</i>	✓	
Chilean rhubarb ¹	<i>Gunnera tinctoria</i>		
Chinese privet ¹	<i>Ligustrum sinense</i>	✓	✓
Climbing asparagus ³	<i>Asparagus scandens</i>	✓	✓
Climbing dock ²	<i>Rumex sagittatus</i>		
Climbing spindleberry ¹	<i>Celastrus orbiculatus</i>		
Coast tea tree ¹	<i>Leptospermum laevigatum</i>		
Common camellia ⁴	<i>Camellia japonica</i>	✓	
Coral tree ⁴	<i>Erythrina xsykesii</i>	✓	

Common Name	Scientific Name	Kohi Point	Mokorua Bush
Cotoneaster ¹	<i>Cotoneaster glaucophyllus</i>	✓	✓
Crack willow ⁴	<i>Salix xfragilis</i>	✓	✓
Creeping clubmoss, selaginella ⁴	<i>Selaginella kraussiana</i>	✓	
Creeping gloxinia ¹	<i>Lophospermum erubescens</i>		
Darwins barberry ¹	<i>Berberis darwinii</i>		
Egeria ¹	<i>Egeria densa</i>		
Elephant's ear ¹	<i>Alocasia brisbanensis</i>	✓	✓
Eucalyptus ⁴	<i>Eucalyptus</i> sp.	✓	✓
Evergreen buckthorn ¹	<i>Rhamnus alaternus</i>		
Fan palm		✓	✓
Fatsia ⁴	<i>Fatsia japonica</i>	✓	
Fig ⁴	<i>Ficus carica</i>	✓	
Flowering cherry ⁵	<i>Prunus</i> sp.	✓	✓
Formosan lily ^{1, 4}	<i>Lilium formosanum</i>	✓	
Fruit salad plant ⁴	<i>Monstera deliciosa</i>	✓	✓
Garden forget-me-not ⁴	<i>Myosotis sylvatica</i>	✓	
Garden nasturtium ^{1, 4}	<i>Tropaeolum majus</i>	✓	
German Ivy ¹	<i>Delairea odorata</i>	✓	
Ginger ^{1, 3}	<i>Hedychium gardnerianum</i>	✓	✓
Glory bush ⁴	<i>Tibouchina urvilleana</i>	✓	✓
Gorse ¹	<i>Ulex europaeus</i>	✓	✓
Grape ²	<i>Vitis vinifera</i>		
Green goddess lily ¹	<i>Zantedeschia aethiopica</i>	✓	
Grey willow ¹	<i>Salix cinerea</i>	✓	✓
Hawthorn ⁴	<i>Crataegus monogyna</i>		✓
Hedge woundwort ⁴	<i>Stachys sylvatica</i>	✓	✓
Himalayan fairy grass ¹	<i>Miscanthus nepalensis</i>	✓	✓
Hornwort ¹	<i>Ceratophyllum demersum</i>		
Horse nettle ¹	<i>Solanum carolinense</i>		
Hydrangea ¹	<i>Hydrangea macrophylla</i>	✓	✓
Italian buckthorn ¹	<i>Rhamnus alaternus</i>		
Ivy ¹	<i>Hedera helix</i>	✓	✓
Ivy-leaved toad flax ⁴	<i>Cymbalaria muralis</i>	✓	
Japanese honeysuckle ¹	<i>Lonicera japonica</i>	✓	✓
Japanese spindleberry ⁴	<i>Euonymus japonicus</i>	✓	
Japanese walnut ¹	<i>Juglans ailantifolia</i>	✓	✓
Japanese wineberry ⁴	<i>Rubus phoenicolasius</i>	✓	✓
Jasmine ^{1, 3}	<i>Jasminum polyanthum</i>	✓	✓
Kāpuka ⁴	<i>Griselinia littoralis</i>		✓
Kauri ⁴	<i>Agathis australis</i>		✓
Kikuyu grass ¹	<i>Cenchrus clandestinus</i>	✓	✓
Kiwifruit ^{1, 3}	<i>Actinidia deliciosa</i>		
Kudzu vine ¹	<i>Pueraria lobata</i>		
Lagarosiphon ¹	<i>Lagarosiphon major</i>		
Lantana ^{1, 3}	<i>Lantana camara</i>		
Lawsons cypress ⁴	<i>Chamaecyparis lawsoniana</i>		✓
Lilac oxalis ⁴	<i>Oxalis incarnata</i>	✓	
Liquorice plant ⁴	<i>Helichrysum petiolare</i>	✓	
Lodgepole pine ^{1, 3}	<i>Pinus contorta</i>		
Loquat ¹	<i>Eriobotrya japonica</i>	✓	✓
Lupin ⁴	<i>Lupinus arboreus</i>	✓	
Macadamia ⁴	<i>Macadamia</i> sp.		✓
Macrocarpa ⁴	<i>Cupressus macrocarpa</i>	✓	
Madeira vine ¹	<i>Anredera cordifolia</i>		

Common Name	Scientific Name	Kohi Point	Mokorua Bush
Mexican daisy ⁴	<i>Erigeron karvinskianus</i>	✓	
Mint ⁴	<i>Mentha</i> sp.	✓	
Monkey apple ⁴	<i>Syzygium smithii</i>	✓	✓
Montbretia ²	<i>Crocsmia xcrocsmiiflora</i>	✓	✓
Moth plant ^{1, 3}	<i>Araujia hortorum</i>	✓	✓
Nassella tussock ¹	<i>Nassella trichotoma</i>		
Noogoora bur ¹	<i>Xanthium strumarium</i>		
Oak ⁴	<i>Quercus</i> sp.	✓	✓
Old man's beard ¹	<i>Clematis vitalba</i>		
Onion weed ⁴	<i>Allium triquetrum</i>		✓
Ornamental acacia ⁴	<i>Acacia</i> sp.	✓	
Palm grass ^{1, 4}	<i>Setaria palmifolia</i>	✓	
Pampas ¹	<i>Cortaderia</i> sp.	✓	✓
Papaya ⁴	<i>Carica papaya</i>	✓	
Pig's ear ¹	<i>Cotyledon orbiculata</i>	✓	
Pink-head knotweed ²	<i>Persicaria capitata</i>	✓	
Phoenix palm ¹	<i>Phoenix canariensis</i>	✓	✓
Plectranthus ⁴	<i>Plectranthus ciliatus</i>	✓	
Poplars ¹	<i>Populus</i> sp.	✓	✓
Privet (tree privet) ¹	<i>Ligustrum lucidum</i>	✓	✓
Purple linaria ⁴	<i>Linaria purpurea</i>	✓	
Purple loosestrife ¹	<i>Lythrum salicaria</i>		
Queensland poplar ⁴	<i>Homalanthus populifolius</i>	✓	✓
Radiata pine ^{1, 3}	<i>Pinus radiata</i>	✓	✓
Ragwort ¹	<i>Senecio jacobaea</i>		✓
Red hot poker ⁴	<i>Kniphofia praecox</i>	✓	
Rhododendron ¹	<i>Rhododendron</i> sp.		
Saltwater paspalum ^{1, 4}	<i>Paspalum vaginatum</i>	✓	
Sagittaria ¹	<i>Sagittaria platyphylla</i>		
Sea couch ^{1, 4}	<i>Elytrigia pycnantha</i>	✓	
Sea rocket ⁴	<i>Cakile maritima</i>	✓	
Senegal tea ¹	<i>Gymnocoronis spilanthoides</i>		
Sexton's bride ⁴	<i>Rhaphiolepis umbellata</i>	✓	✓
Shrub balsam ⁴	<i>Impatiens sodenii</i>	✓	
Smilax ²	<i>Asparagus asparagoides</i>	✓	
Spanish heath ²	<i>Erica lusitanica</i>	✓	
Spartina ¹	<i>Spartina</i> spp.		
Spineless yucca ⁴	<i>Yucca gigantea</i>	✓	✓
Spiny emex ¹	<i>Emex australis</i>		
Stinking iris ⁴	<i>Iris foetidissima</i>	✓	
Succulents and bromeliads ⁴		✓	
Sydney golden wattle ¹	<i>Acacia longifolia</i>	✓	✓
Taiwanese cherry ¹	<i>Prunus campanulata</i>		
Tamarillo ⁴	<i>Solanum betaceum</i>	✓	
Taro ⁴	<i>Colocasia esculenta</i>	✓	
Thorn apple ¹	<i>Datura stramonium</i>		
Tradescantia ^{1, 3}	<i>Tradescantia fluminensis</i>	✓	✓
Tree lucerne ⁴	<i>Chamaecytisus palmensis</i>	✓	
Tuber ladder fern ²	<i>Nephrolepis cordifolia</i>	✓	✓
Tutsan ¹	<i>Hypericum androsaemum</i>	✓	✓
Variegated thistle ¹	<i>Silybum marianum</i>		
Velvet groundsel ¹	<i>Roldana petasitis</i>	✓	
Watsonia ²	<i>Watsonia bulbifera</i>		
Wilding pines ¹		✓	
Wild rose ¹	<i>Rosa</i> sp.		✓
Willow hybrid ⁴	<i>Salix</i> sp.	✓	✓

Common Name	Scientific Name	Kohi Point	Mokorua Bush
Willow-leaved hakea ^{1,4}	<i>Hakea salicifolia</i>	✓	✓
Wisteria ⁴	<i>Wisteria sinensis</i>		✓
Woolly nightshade ³	<i>Solanum mauritianum</i>	✓	✓
Yellow flag iris ¹	<i>Iris pseudacorus</i>		

LOCATION OF THREATENED AND
AT RISK PLANT SPECIES IN
KOHI POINT SCENIC RESERVE
AND MOKORUA SCENIC
RESERVE



Legend

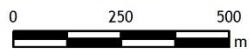
- Site boundary
- *Euphorbia glauca*
- *Korthalsella salicornioides*
- *Pimelea tomentosa*
- Walking track
(sourced from the Local Government Geospatial Alliance)

Data Acknowledgment

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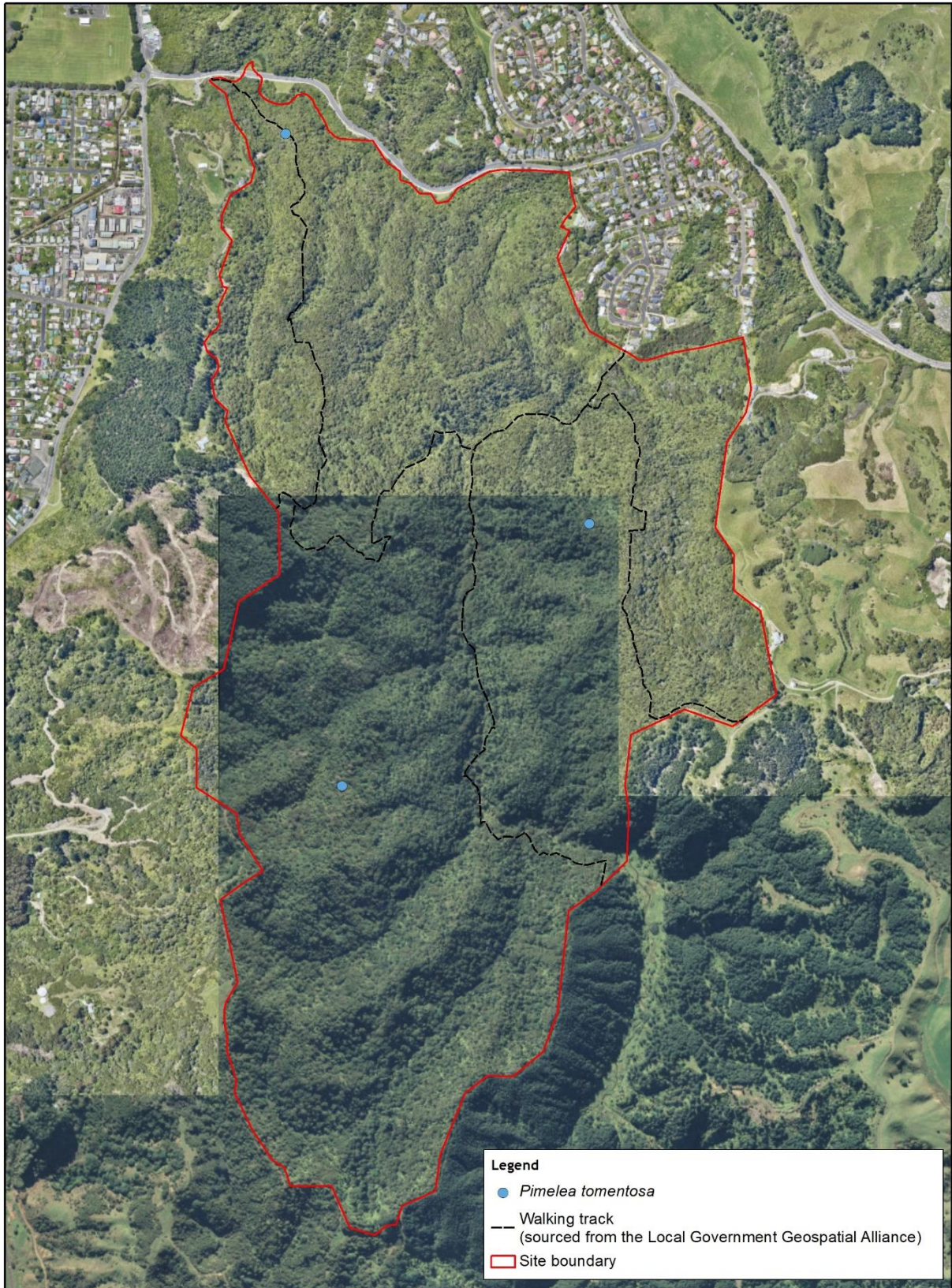
Report: 5441
Client: BOPRC
Ref: 01 2148
Path: E:\gis\Mokorua Bush\mxd\
File: KōhiPoint_ThreatenedPlants_A4.mxd

Figure 3. Location of threatened plant species at Kōhi Point Scenic Reserve, 2020.



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Scale: 1:15,000
Date: 29/06/2020
Cartographer: LD
Format: A4R



Legend

- *Pimelea tomentosa*
- Walking track
(sourced from the Local Government Geospatial Alliance)
- Site boundary

Data Acknowledgment

Imagery sourced from Taupo District Council.
Imagery date: April 2016

Report: 5441
Client: BOPRC
Ref: 01 2148
Path: E:\gis\Mokoroa Bush\mxd\
File: MokoroaBush_ThreatenedPlants_P.mxd

Figure 4. Location of *Pimelea tomentosa* at Mokoroa Scenic Reserve, 2020.

0 250 500 m

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Scale: 1:12,300
Date: 26/06/2020
Cartographer: LD
Format: A4

**NATURALISED AND EXOTIC PLANT SPECIES RECORDED
AT KOHI POINT SCENIC RESERVE AND MOKORUA
BUSH SCENIC RESERVE**

1 Beadel and Shaw 1988

* Species for which distribution data was captured in the Collector App May/June 2020.

Scientific Name	Common Name	Kōhi Point	Mokorua
Gymnosperms			
<i>Chamaecyparis lawsoniana</i> *	Lawson's cypress	✓	
<i>Pinus pinaster</i> ¹	Maritime pine	✓	
<i>Pinus radiata</i> *	Radiata pine	✓	✓
Monocot. trees and shrubs			
	Fan palm	✓	
<i>Alocasia brisbanensis</i> *	Elephants ears	✓	
<i>Archontophoenix cunninghamiana</i> *	Bangalow palm	✓	
<i>Cordyline fruticosus</i>	Ti	✓	
<i>Musa ×paradisical</i>	Banana palm	✓	
<i>Phoenix canariensis</i> *	Phoenix palm	✓	
Dicot. trees and shrubs			
<i>Acacia longifolia</i> *	Sydney golden wattle	✓	
<i>Acacia mearnsii</i> *	Black wattle	✓	✓
<i>Albizia julibrissin</i>	Silk tree	✓	
<i>Banksia integrifolia</i> *	Banksia	✓	
<i>Berberis glaucocarpa</i> *	Barberry		✓
<i>Bougainvillea glabra</i>	Bougainvillea		✓
<i>Brugmansia candida</i> *	Angel's trumpet	✓	
<i>Buddleja davidii</i>	Buddleia	✓	✓
<i>Callistemon</i> sp.	Bottlebrush	✓	
<i>Camellia japonica</i> *	Common camellia	✓	
<i>Carica papaya</i> *	Papaya	✓	
<i>Chamaecytisus palmensis</i> *	Tree lucerne	✓	✓
<i>Cotoneaster glaucophyllus</i> *	Cotoneaster	✓	✓
<i>Crataegus monogyna</i> *	Hawthorn		✓
<i>Erica lusitanica</i> *	Spanish heath	✓	
<i>Eriobotrya japonica</i> *	Loquat	✓	
<i>Erythrina ×sykesii</i> *	Coral tree	✓	
<i>Eucalyptus</i> sp.*	Eucalyptus		✓
<i>Euonymus japonicus</i> *	Japanese spindleberry	✓	
<i>Fatsia japonica</i> *	Fatsia	✓	
<i>Ficus carica</i> *	Fig	✓	
<i>Gomphocarpus fruticosus</i>	Swan plant	✓	✓
<i>Grevillea</i> sp.		✓	
<i>Hakea salicifolia</i> *	Willow-leaved hakea	✓	
<i>Helichrysum petiolare</i> *	Liquorice plant	✓	
<i>Homalanthus populifolius</i> *	Queensland poplar	✓	✓
<i>Hydrangea macrophylla</i> *	Hydrangea	✓	
<i>Hypericum androsaemum</i> ¹ *	Tutsan	✓	✓
<i>Juglans ailantifolia</i> *	Japanese walnut	✓	
<i>Ligustrum lucidum</i> *	Tree privet	✓	✓
<i>Ligustrum sinense</i> *	Chinese privet	✓	✓
<i>Lupinus arboreus</i> *	Lupin	✓	

Scientific Name	Common Name	Kōhi Point	Mokorua
<i>Nerium oleander</i>	Oleander	✓	
<i>Paraserianthes lophantha</i> *	Brush wattle	✓	
<i>Persea americana</i> *	Avocado	✓	✓
<i>Populus alba</i> 'Nivea'	Silver poplar		✓
<i>Prunus</i> sp.*	Flowering cherry, ornamental cherry,	✓	
<i>Quercus</i> sp.*	Oak	✓	
<i>Rhaphiolepis umbellata</i> *	Sexton's bridge	✓	✓
<i>Roldana petasitis</i> *	Velvet groundsel	✓	
<i>Rosa</i> sp.*	Climbing rose		✓
<i>Rubus phoenicolasius</i> *	Japanese wineberry	✓	✓
<i>Rubus</i> sp. (<i>R. fruticosus</i> agg.)*	Blackberry	✓	✓
<i>Salix caprea</i>	Goat willow		✓
<i>Salix cinerea</i> *	Grey willow	✓	
<i>Salix</i> sp.*			✓
<i>Schinus terebinthifolius</i>	Brazilian pepper tree	✓	
<i>Solanum betaceum</i> *	Tamarillo	✓	
<i>Solanum mauritianum</i> *	Woolly nightshade	✓	
<i>Syzygium smithii</i> *	Lillypilly, monkey apple	✓	
<i>Tecomaria capensis</i> *	Cape honeysuckle	✓	
<i>Teline monspessulana</i> ¹	Montpellier broom	✓	
<i>Teucrium fruticans</i> ¹		✓	
<i>Tibouchina urvilleana</i> *	Glory bush	✓	✓
<i>Ulex europaeus</i> *	Gorse	✓	✓
Monocot. lianes			
<i>Asparagus asparagoides</i> *	Smilax	✓	
<i>Asparagus scandens</i> *	Climbing asparagus	✓	✓
<i>Monstera deliciosa</i> *	Fruit salad plant	✓	
Dicot. lianes			
<i>Araujia hortorum</i> *	Moth plant	✓	
<i>Calystegia silvatica</i> *	Greater bindweed	✓	
<i>Calystegia sepium</i> x <i>C. silvatica</i>		✓	
<i>Hedera helix</i> *	Ivy	✓	✓
<i>Ipomoea indica</i> *	Blue morning glory	✓	
<i>Jasminum</i> sp.*	Jasmine	✓	✓
<i>Lonicera japonica</i> *	Japanese honeysuckle	✓	✓
<i>Senecio angulatus</i>	Cape ivy	✓	
<i>Wisteria sinensis</i> *	Wisteria		✓
Lycopods and psilopsids			
<i>Selaginella kraussiana</i> *	Creeping clubmoss, selaginella	✓	
Ferns			
<i>Nephrolepis cordifolia</i> *	Tuber ladder fern	✓	
Grasses			
<i>Agrostis capillaris</i>	Browntop		✓
<i>Agrostis stolonifera</i>	Creeping bent	✓	✓
<i>Aira caryophyllea</i> subsp. <i>caryophyllea</i>	Silver hairy grass	✓	
<i>Anthoxanthum odoratum</i>	Sweet vernal	✓	✓
<i>Axonopus fissifolius</i>	Narrow-leaved carpet grass	✓	✓
<i>Briza maxima</i>	Large quaking grass	✓	
<i>Briza minor</i>	Shivery grass	✓	
<i>Bromus unioloides</i>	Brome	✓	
<i>Cenchrus clandestinus</i> *	Kikuyu grass	✓	✓
<i>Cortaderia selloana</i> *	Pampas	✓	✓
<i>Cynodon dactylon</i>	Indian doab	✓	
<i>Dactylis glomerata</i>	Cocksfoot	✓	✓

Scientific Name	Common Name	Kōhi Point	Mokorua
<i>Digitaria sanguinalis</i>	Summer grass	✓	✓
<i>Ehrharta erecta</i>	Veldt grass	✓	
<i>Elytrigia pycnantha</i> *	Sea couch	✓	
<i>Elytrigia repens</i>	Couch	✓	
<i>Eragrostis brownii</i>	Bay grass		✓
<i>Holcus lanatus</i>	Yorkshire fog	✓	✓
<i>Lagurus ovatus</i>	Harestail	✓	
<i>Lolium arundinaceum</i> subsp. <i>arundinaceum</i>	Tall fescue	✓	✓
<i>Lolium perenne</i>	Rye grass	✓	
<i>Miscanthus nepalensis</i> *	Himalaya fairy grass	✓	
<i>Paspalum dilatatum</i>	Paspalum	✓	✓
<i>Paspalum distichum</i>	Mercer grass	✓	✓
<i>Paspalum vaginatum</i> *	Saltwater paspalum	✓	
<i>Poa annua</i>	Annual poa	✓	✓
<i>Setaria palmifolia</i>	Palm grass	✓	
<i>Setaria pumila</i>	Yellow bristle grass	✓	✓
<i>Setaria verticillata</i>	Rough bristle grass	✓	
<i>Sporobolus africanus</i>	Ratstail	✓	✓
<i>Vulpia myuros</i>	Vulpia hair grass	✓	
Sedges			
<i>Cyperus brevifolius</i>	Globe sedge	✓	
<i>Cyperus congestus</i>	Purple umbrella sedge	✓	
<i>Cyperus eragrostis</i>	Umbrella sedge	✓	
<i>Cyperus alternifolius</i>			✓
<i>Isolepis sepulcralis</i>		✓	✓
Rushes			
<i>Juncus articulatus</i>	Jointed rush	✓	✓
<i>Juncus bufonius</i> var. <i>bufonius</i>	Toad rush	✓	
<i>Juncus effusus</i> var. <i>effusus</i>	Soft rush, leafless rush	✓	✓
<i>Juncus tenuis</i> var. <i>tenuis</i>	Track rush	✓	✓
Monocot. herbs (other than orchids, grasses, sedges, and rushes)			
<i>Agapanthus praecox</i> *	Agapanthus	✓	✓
<i>Amaryllis belladonna</i>	Naked lady	✓	
<i>Allium triquetrum</i> *	Onion weed	✓	
<i>Alstroemeria</i> sp.	Orange alstroemeria	✓	
<i>Canna indica</i> *	Canna lily, Indian shoot	✓	
<i>Colocasia esculenta</i> *	Taro	✓	
<i>Crocsmia xrocosmiiflora</i> *	Montbretia	✓	✓
<i>Hedychium gardnerianum</i> *	Kahili ginger, wild ginger	✓	
<i>Iris foetidissima</i> *	Stinking iris	✓	
<i>Iris</i> sp.*		✓	✓
<i>Kniphofia praecox</i> *	Red hot poker	✓	
<i>Lilium formosanum</i> *	Formosan lily	✓	✓
<i>Musa xparadisica</i>	Banana	✓	
<i>Tradescantia fluminensis</i> *	Tradescantia	✓	✓
<i>Zantedeschia aethiopica</i> *	Arum lily	✓	
<i>Zantedeschia aethiopica</i> 'Green Goddess'		✓	
Composite herbs			
<i>Achillea millefolium</i>	Yarrow		✓
<i>Arctotheca calendula</i>	Cape weed	✓	
<i>Artemisia verlotiorum</i>	Chinese mugwort	✓	
<i>Aster subulatus</i>	Sea aster	✓	
<i>Bellis perennis</i>	Lawn daisy	✓	
<i>Bidens frondosa</i>	Beggars' ticks		✓

Scientific Name	Common Name	Kōhi Point	Mokorua
<i>Cirsium arvense</i>	Californian thistle	✓	
<i>Cirsium vulgare</i>	Scotch thistle	✓	✓
<i>Crepis capillaris</i>	Hawksbeard	✓	✓
<i>Erigeron karvinskianus</i> *	Mexican daisy	✓	
<i>Erigeron sumatrensis</i>	Broad-leaved fleabane	✓	✓
<i>Gamochaeta calviceps</i>	Silky cudweed	✓	
<i>Gamochaeta coarctata</i>	Purple cudweed	✓	✓
<i>Hypochaeris radicata</i>	Catsear	✓	✓
<i>Jacobaea vulgaris</i> *	Ragwort	✓	✓
<i>Lactuca serriola</i>	Prickly lettuce	✓	
<i>Leontodon taraxacoides</i>	Hawkbit	✓	✓
<i>Mycelis muralis</i>	Wall lettuce	✓	✓
<i>Pericallis</i> × <i>hybrida</i>	Cineraria	✓	
<i>Sigesbeckia orientalis</i>	Indian weed, punawaru	✓	✓
<i>Sonchus asper</i>	Prickly puha	✓	
<i>Sonchus oleraceus</i>	Puha, sow thistle	✓	✓
<i>Taraxacum officinale</i>	Dandelion	✓	✓
Dicot. herbs (other than composites)			
<i>Acanthus mollis</i> *	Bear's breeches		✓
<i>Anagallis arvensis</i>	Scarlet pimpernel	✓	✓
<i>Aphanes arvensis</i>	Parsley piert	✓	✓
<i>Atriplex prostrata</i>	Orache	✓	
<i>Cakile maritima</i> *	Sea rocket	✓	
<i>Callitriche stagnalis</i>	Starwort	✓	✓
<i>Centaureum erythraea</i>	Centaury	✓	✓
<i>Cerastium fontanum</i> subsp. <i>vulgare</i>	Mouse-ear chickweed	✓	
<i>Chenopodium album</i>	Fathen		✓
<i>Cotyledon orbiculata</i> *	Pig's ear	✓	
<i>Cymbalaria muralis</i> *	Ivy-leaved toad flax	✓	
<i>Daucus carota</i>	Wild carrot	✓	
<i>Digitalis purpurea</i>	Foxglove	✓	✓
<i>Euphorbia lathyris</i> *	Caper spurge	✓	
<i>Euphorbia peplus</i>	Milkweed	✓	✓
<i>Foeniculum vulgare</i>	Fennel	✓	✓
<i>Fumaria muralis</i>	Scrambling fumitory	✓	✓
<i>Galeobdolon luteum</i> *	Aluminium plant	✓	
<i>Galium aparine</i>	Cleavers	✓	✓
<i>Impatiens sodenii</i>	Shrub balsam	✓	
<i>Linaria purpurea</i> *	Purple linaria	✓	✓
<i>Linum bienne</i>	Pale flax	✓	✓
<i>Lotus pedunculatus</i>	Lotus	✓	✓
<i>Mentha pulegium</i>	Penny royal		✓
<i>Mimulus guttatus</i>	Monkey musk		✓
<i>Modiola caroliniana</i>	Creeping mallow	✓	✓
<i>Myosotis sylvatica</i> *	Garden forget-me-not	✓	
<i>Nasturtium officinale</i>	Watercress	✓	✓
<i>Oenothera stricta</i>	Evening primrose	✓	
<i>Ornithopus perpusillus</i>	Wild seradella	✓	
<i>Orobanche minor</i>	Broomrape	✓	
<i>Oxalis incarnata</i>	Lilac oxalis	✓	✓
<i>Parentucellia viscosa</i>	Tarweed	✓	
<i>Persicaria capitata</i> *	Pink-head knotweed	✓	
<i>Persicaria maculosa</i>	Willow weed		✓
<i>Physalis peruviana</i>	Cape gooseberry	✓	
<i>Phytolacca octandra</i>	Inkweed	✓	✓
<i>Plantago australis</i>	Swamp plantain	✓	
<i>Plantago lanceolata</i>	Narrow-leaved plantain	✓	✓

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<i>Plantago major</i>	Broad-leaved plantain		✓
<i>Plectranthus ciliatus</i> *	Plectranthus	✓	✓
<i>Plectranthus ecklonii</i>	Blue spur flower	✓	✓
<i>Polycarpon tetraphyllum</i>	Allseed	✓	
<i>Portulaca oleracea</i>	Wild portulaca	✓	
<i>Prunella vulgaris</i>	Selfheal	✓	✓
<i>Ranunculus repens</i>	Creeping buttercup	✓	✓
<i>Raphanus raphanistrum</i> subsp. <i>raphanistrum</i>	Wild radish	✓	
<i>Rumex acetosella</i>	Sheep's sorrel	✓	✓
<i>Rumex obtusifolius</i>	Broad-leaved dock	✓	✓
<i>Sagina procumbens</i>	Pearlwort	✓	
<i>Scrophularia auriculata</i>	Water figwort		✓
<i>Silene gallica</i>	Catchfly	✓	✓
<i>Solanum lycopersicum</i>	Tomato	✓	
<i>Solanum nigrum</i>	Black nightshade	✓	✓
<i>Solanum tuberosum</i>	Potato	✓	
<i>Stellaria alsine</i>	Bog stitchwort		✓
<i>Stellaria media</i>	Chickweed	✓	✓
<i>Trifolium arvense</i>	Haresfoot trefoil	✓	
<i>Trifolium pratense</i>	Red clover	✓	✓
<i>Trifolium repens</i>	White clover	✓	✓
<i>Tropaeolum majus</i> *	Garden nasturtium	✓	
<i>Verbascum thapsus</i>	Woolly mullein	✓	
<i>Verbascum virgatum</i>	Moth mullein	✓	✓
<i>Verbena bonariensis</i>	Purple-top	✓	✓
<i>Veronica anagallis-aquatica</i>	Water speedwell	✓	✓
<i>Wahlenbergia</i> sp.	Harebell	✓	



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