



# UAWA / TOLAGA BAY BIOBLITZ

2015 SUMMARY



ALLAN WILSON CENTRE





## SITE OVERVIEW

The sites visited are summarised in the table below

Site	Notes
Kaiaua Bay	Bay coastline and sand dune area visited by students and a specialist team on 12 February
Kaiaua Bush	Mature lowland forest remnant visited by students and a specialist team on 12 February
Kaitawa Estuary	Estuary and associated sandspit visited by students and a specialist team on 12 February
Mangatokerau	Gorge area in river above Uawa flats. This area was not surveyed but had a bat detector installed for several days.
Oputama Cooks Cove	Assessment along the Cooks Cove walkway and around the shore at Oputama Cooks Cove by specialist team and students on 13 February
Parkers Bush	Lowland kahikatea swampland forest remnant visited by students and a specialist team on 12 February
Paroa Station	Night time spotlighting of stream within small fenced forest remnant area above Bartlets Bridge
School Area	Collection of species from around the area of Tolaga Bay Area School and adjacent riverbank areas.
Tatarahake	Rocky beach area, dunes and escarpment at the northern side of Tolaga Bay



## SPECIES FOUND

A total of 526 different species were identified during the bioblitz. Half of these were animals and half plants and algae. Summaries of the species groups and also the complete species list are attached.

Rare species found included the NZ Dotterel at the Kaitawa Estuary, which appear to be breeding, and also long tailed bats at Mangatokerau Gorge.



Porcellio scaber



## ACKNOWLEDGMENTS

**TOLAGA BAY  
AREA SCHOOL &  
KAHUKURANUI**

**HAUITI LAND  
INCORPORATIONS**

 Department of Conservation  
*Te Papa Atawhai*

 **GISBORNE**  
DISTRICT COUNCIL

## SPECIES COUNT

Species	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cools Cove	Parkers Bush	Paroa Station	School Area	Tatarahake	All Sites
Beetles		5	1					14	7	27
Birds	14	8	18		18	5	1	8	3	36
Bivalves			3		1		1	9	6	17
Bristle tails and silverfish								1		1
Bugs		3	1				1	9		14
Chiton									3	3
Cockroaches, termites and mantis			1					2	1	3
Corals and jellyfish	1		1						1	2
Crabs, lobsters and barnacles			2		1		1	1	10	15
Dragonflies and damselflies			1				1			2
Earwigs								1		1
Fish							5			5
Flat worms		1								1
Flies		3						6	2	11
Grasshoppers, crickets and weta		2	1		1			6		10
Lizards and Frogs		1				1				2
Mammals				1			1			2
Millipedes and centipedes		3						1	1	5
Moths, butterflies and caddis flies		1	2				1	6		8
Octopus and squid	1									1
Other crustaceans	1	1	3		1			1	1	7
Sea urchins and starfish									2	2
Segmented Worms					1		1	1	2	5
Snails	6	2	5		1		1	5	21	36
Spiders, mites and harvestman		7	5					16	2	30
Springtails		2							2	4
Stick insects					1					1
Tunicates									1	1
Wasps, bees and ants		2	1		1			7	1	11
Brown algae	1				4				4	7
Conifers	1	2	1		2	1			1	3
Cyanobacteria								1		1
Ferns		24	1		24	17			2	36
Flowering plants	11	72	45		86	63	3	1	28	198
Fungi			1							1
Green algae							1		2	3
Liverworts					1	1				2
Mosses		4			4	3				10
Red algae									2	2
<b>All species count</b>	<b>36</b>	<b>143</b>	<b>93</b>	<b>1</b>	<b>147</b>	<b>91</b>	<b>18</b>	<b>96</b>	<b>105</b>	<b>526</b>

# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Beetles (27)</b>		<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>7</b>
Adrastia sp.	Stone Beetle									●
Amarygmus tristis	Dakling beetle								●	
Arhopalus tristis	Burnt pine longhorn beetle								●	
Cerylonidae sp.	Beetle									●
Chaerodes trachyscelides	Sand darkling beetle								●	
Cicindela tuberculata	Tiger Beetle								●	
Coccinella undecimpunctata	11 spot ladybird								●	
Costelytra zealandica	Grass grub								●	
Ctenognathus adamsi	Ground Beetle		●							
Elateridae sp.	Click beetle		●							
Entiminae sp.	Weevil									●
Eucolaspis sp.	Flower Beetle		●							
Exapion ulicis	Gorse weevil								●	
Halmus chalybeus	Steel blue ladybird								●	
Mitrastethus baridioides	Weevil								●	
Nemonychidae sp.	Weevil									●
Pericoptus truncatus	Sand scarab								●	
Phoeloneis simulons	Dakling beetle								●	
Prionoplus reticularis	Huhu grub			●						
Quidius sp.	Rove Beetle								●	
Sapintus aucklandicus	Anthicid beetle									●
Sciridae sp.	Beetle		●							
Sepedophilus sp.	Rove Beetle									●
Stethaspis longicornis	Green cockchafer		●							
Tenebrionidae sp. Larvae	Darkling beetle								●	
Thelyphassa lineata	Lax beetle								●	
Thyreocephalus sp.	Rove beetle									●

<b>Birds (35)</b>		<b>14</b>	<b>8</b>	<b>18</b>	<b>0</b>	<b>17</b>	<b>5</b>	<b>1</b>	<b>8</b>	<b>3</b>
Acridotheres tritis	Common myna	●								
Alauda arvensis	Skylark			●						
Anthornis melanura	Bellbird		●							
Carduelis carduelis	Goldfinch			●		●				
Charadrius obscurus	New Zealand dotterel			●						
Charadrius bicinctus	Banded dotterel			●					●	
Circus approximans	Australasian harrier, Kahu	●		●						
Colomba livia	Rock pigeon					●				
Egretta novaehollandiae	White faced heron		●	●		●				
Egretta sacra	Reef heron									●
Emberiza citrinella	Yellow hammer	●				●				

Circus approximans



# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Birds (35) - continued</b>		<b>14</b>	<b>8</b>	<b>18</b>	<b>0</b>	<b>17</b>	<b>5</b>	<b>1</b>	<b>8</b>	<b>3</b>
Fringilla coelebs	Chaffinch		●			●				
Gerygone igata	Grey warbler			●		●	●			
Gymnorhina tibicen	Magpie	●	●			●				
Haematopus unicolor	Variable oyster catcher	●		●		●				●
Hemiphaga novaeseelandiae	Kereru		●				●			
Himantopus himantopus	Pied stilt			●		●			●	
Hirundo neoxena	Welcome swallow	●	●	●		●				
Larus dominicanus	Black-backed gull	●		●		●				
Larus novaehollandiae	Red-billed gull	●		●					●	●
Ninox novaeseelandiae	Morepork, Ruru						●			
Passer domesticus	House sparrow	●				●				
Phalacrocorax varius	Pied shag								●	
Phalacrocorax sulcirostris	Little black shag	●								
Porphyrio melanotus	Pukeko			●					●	
Prothemadera novaeseelandiae	Tui		●			●				
Rhipidura fuliginosa	New Zealand fantail, Piwakawaka			●		●	●			
Sterna striata	White fronted tern			●					●	
Sturnus vulgaris	Common starling	●		●		●				
Tadorna variegata	Paradise shelduck	●								
Todiramphus sanctus	Kingfisher	●		●		●	●	●		
Turdus merula	Eurasian blackbird					●				
Turdus philomelos	Song thrush	●								
Vanellus miles	Spur-winged plover			●					●	
Zosterops lateralis	Silvereye		●						●	

<b>Bivalves (15)</b>		<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>6</b>
Aulacomya maoriana	Ribbed mussel								●	
Austrovenus stutchburyi	Tuangi			●						
Barnea similis	Piddock									●
Crassula aequilatera	Clam								●	●
Dosinia anus	Clam								●	●
Hydridella menziesii	Freshwater mussel, Kakahi							●		
Macomona liliana	Wedge shell								●	
Mactra ovata	Trough shell			●						
Paphies australis	Pipi			●						
Paphies subtriangulata	Tuatua								●	●
Perna canaliculus	Green mussel, Kuku									●
Peronaea gaimardi	Hanikura								●	
Purpurocardia purpurata									●	
Spisula discors	Trough shell								●	

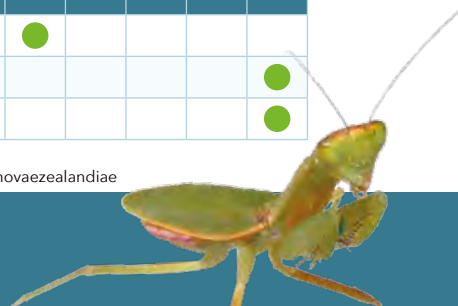
Porphyrio melanotus



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Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Bivalves (15) - continued</b>		<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>6</b>
Xenostrobus neozelanicus	Mussell									●
<b>Bristle tails and silverfish (1)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
Thysanura sp.	Silverfish								●	
<b>Bugs (14)</b>		<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>
Amphipsalta zealandica	Clapping cicada								●	
Corystoterpa sp.1	Plant hopper								●	
Corystoterpa sp.2	Plant hopper								●	
Heteroptera sp.	Plant bug								●	
Kikihia sp.	Shrub cicada								●	
Microvelia	Water bug						●			
Miridae sp.1	Plant bug		●							
Miridae sp.2	Plant Bug								●	
Nezara viridula	Green shield bug		●							
Psocoptera sp.	Bark lice								●	
Scolypopa australis	Passion vine hopper		●							
Sigara sp.	Water boatman								●	
Siphanta acuta	Green plant hopper								●	
Unknown Cicada	Unknown Cicada			●						
<b>Chiton (3)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
Chiton glaucus	Chiton									●
Ischnochiton maorianus	Variable chiton									●
Sypharochiton pelliserpentis	Chiton									●
<b>Cockroaches, termites and mantis (3)</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>
Celatoblatta sp.	Cockroach									●
Orthodera novaezealandiae	Praying mantis								●	
Platzosteria novaeseelandiae	Black cockroach			●					●	
<b>Corals and jellyfish (2)</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
Oulactis muscosa	Sand anemone									●
Physalia physalia	Bluebottle	●		●						
<b>Crabs, lobsters and barnacles (15)</b>		<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>10</b>
Balanus trigunus	Tiotio					●				
Chamaesipho columna	Barnacle									●
Epopella plicata	Barnacle									●

Orthodera novaezealandiae



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<b>Crabs, lobsters and barnacles (15) - continued</b>		<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>10</b>
Helice crassa	Mud crab			●		●				
Hemigrapsus sexdentatus	Crab									●
Heterozius rotundifrons	Crab									●
Lepas sp	Goose neck barnacles								●	
Leptograpsus variegatus	Crab									●
Notomithrax ursus	Crab									●
Pagurus sp.	Hermit crab									●
Paratya	Freshwater shrimp							●		
Petrolisthes elongatus	Half crab									●
Scylla sp.	Mud crab			●						
Unknown Goose barnacle	Unknown Goose barnacle									●
Unknown hermit crab	Unknown hermit crab									●
<b>Dragonflies and damselflies (2)</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Procordulia grayi	Dragonfly			●						
Xanthocnemis sp.	Damselfly							●		
<b>Earwigs (1)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
Anisolabis littorea	Shore earwig								●	
<b>Fish (5)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>
Anguilla australis	Shortfinned eel							●		
Anguilla diffebachii	Longfinned eel							●		
Galaxios brevipinnis	Inanga							●		
Gobiomorphus gobioides	Giant bully							●		
Gobiomorphus sp.	Bully sp.							●		
<b>Flat worms (1)</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Australopacifica sp.	Flatworm		●							
<b>Flies (11)</b>		<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
Arachnocampus luminosa	Glow worm		●							
Asilidae sp.	Robber fly		●							
Calypttratae sp.1	Fly									●
Calypttratae sp.2	Fly								●	
Chironomidae sp.	Fly								●	
Lucilia sericata	Green Blowfly								●	
Muscidae sp.1	House fly								●	
Muscidae sp.2	Fly								●	

Anguilla diffebachii

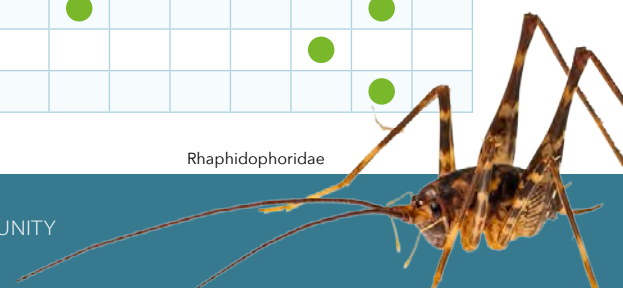




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<b>Flies (11) - continued</b>		<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
Psychodidae sp.	Moth fly								●	
Sciaridae sp.	Sciarid fly		●							
Sphaeroceridae sp.	Fly									●
<b>Grasshoppers, crickets and weta (10)</b>		<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>
Caedicia simplex	Katydid					●				
Conocephalus semivittatus	Longhorn grasshopper								●	
Hemideina thoracica	Auckland tree weta								●	
Locusta migratoria	Locust								●	
Neobius sp. 1	Cricket								●	
Phaulacridium marginale	Field grass hopper								●	
Rhaphidophoridae sp. 1	Cave weta		●							
Rhaphidophoridae sp.2	Cave weta		●							
Teleogryllus commodus	Large cricket								●	
Unknown Cricket	Unknown Cricket			●						
<b>Lizards and Frogs (2)</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
Hoplodactylus maculatus	Common gecko						●			
Litoria raniformis	Golden bell frog		●							
<b>Mammals (2)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Chalinolobus tuberculatus	Long tail bats				●					
Trichosurus vulpecula	Possum							●		
<b>Millipedes and centipedes (5)</b>		<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
Dimerogonus sp.	Millipede		●							
Geophilomorpha sp.	Centipede								●	
Polydesmid sp.	Millipede									●
Procyliosoma sp.	Pill millipede		●							
Schedotrigona sp.	Millipede		●							
<b>Moths, butterflies and caddis flies (8)</b>		<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>
Aenetus virescens	Puriri moth		●							
Liothula omnivoras	Common bag moth								●	
Lycaena sp.	Copper butterfly			●					●	
Orocrambus sp.	Grass Moth								●	
Pieris rapae	White Butterfly			●					●	
Trichoptera triplectides	Woody cased caddis							●		
Wiseanna sp.	Porina moth								●	

Rhaphidophoridae



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<b>Moths, butterflies and caddis flies (8) - continued</b>		<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>
Zizania labradus	Blue butterfly								●	
<b>Octopus and squid (1)</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Cephalopoda	Rams horn shell	●								
<b>Other crustaceans (6)</b>		<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
Hyale sp.	Amphipod									●
Isopoda sp.	Slater		●							
Porcellio scaber	Common slater			●					●	
Unknown sandhopper	Sandhopper	●		●						
Unknown sea slater	Unknown Sea slater			●						
<b>Sea urchins and starfish (2)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
Evechinus chloroticus	Sea urchin									●
Patiriella regularis	Starfish									●
<b>Segmented Worms (5)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
Annelid sp.	Earthworm								●	
Galeolaria or Pomatocerus	Worm tube									●
Glyceridae	Blood worm					●				
Green Polychaete										●
Hirudinea	Freshwater leech							●		
<b>Snails (37)</b>		<b>7</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>22</b>
Amphibola crenata	Mud snail			●						
Cantareus aspersus	Garden snail								●	
Cantharidus huttonii	Topshell					●				
Cantharidus tessellatus	Snail									●
Cellana flava	Limpet	●								●
Cellana ornata	Ornate Limpet	●								●
Cellana radians	Radiate limpet	●								●
Charopa sp.1	Snail		●							
Charopa sp.2	Snail									●
Charopa sp.3	Snail									●
Cochilcella barbara	Small pointed snail								●	
Coelotrochus viridus	Snail									●
Cominella glandiformis	Whelk			●						
Cookia sulcata	Cook's turban	●								●
Dicathis orbita	Rock shell									●

Cantareus aspersus

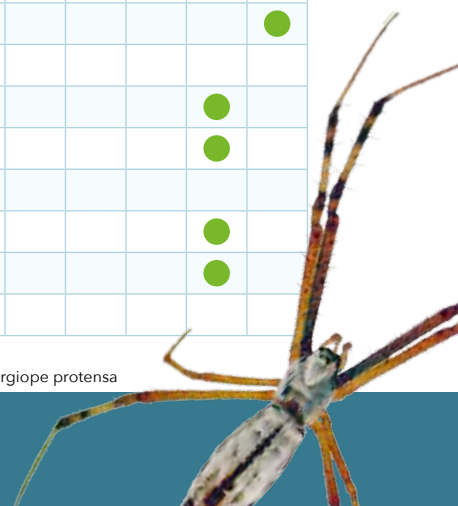


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Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Snails (37) - continued</b>		<b>7</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>22</b>
Diloma aethiops	Snail									●
Diloma zelandica	Snail									●
Haliotis iris	Black foot paua									●
Haustrum haustorium	Rock shell									●
Lauria cylindracea	Common chrysalis snail								●	
Limax maximus	Leopard slug								●	
Lunella smaragda	Snail									●
Notoacmea elongata	Limpet									●
Notoacmea parvicornida	Limpet									●
Notoacmea pileopsis	Limpet									●
Onchidella nigricans	Marine slug									●
Oxychilus cellarius	Cellar snail			●					●	
Pleuroloba costellaris	Snail			●						●
Potamopyrgus antipodarum	NZ mud snail							●		
Potamopyrgus estuarinus	Snail			●						
Punctidae sp.	Snail		●							
Sigapatella novaezelandiae	Snail									●
Unknown rock borer	Unknown rock borer	●								
Unknown snail	Unknown snail									●
Unknown whelk	Unknown whelk	●								

<b>Spiders, mites and harvestman (30)</b>		<b>0</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>2</b>
Agelenidae sp.2	Sheet Web spider								●	
Agelenidae sp.3	Sheet Web spider								●	
Agelenidae sp.1	Sheet Web spider								●	
Amphinectid sp.	Sheet Web spider								●	
Argiope protensa	Long grass spider			●						
Australomimetes sp.	Spider		●							
Cambridgea sp.	Sheet Web spider								●	
Clubiona sp.	Hopping spider								●	
Cryptaranea sp.	Orb Web Spider								●	
Cryptostigmatidae sp.1	Mite									●
Cryptostigmatidae sp.2	Mite									●
Cryptachaea sp.	Spider		●							
Dolomedes minor	Nursery web spider								●	
Gnaphosidae sp.	Spider								●	
Megalopsalis sp.	Long leg harvestman		●							
Migas sp.	Tree trap door spider								●	
Novaranea queribunda	Orb Web spider								●	
Nuncia sp.	Short leg harvestman		●							

Argiope protensa



# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Spiders, mites and harvestman (30) - continued</b>		<b>0</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>2</b>
Oxyopes gracilipes	Spider								●	
Phalangium opilio	Harvestman								●	
Pholcidae	Daddy long legs			●						
Pholcus phalangiodes	Daddy long leg spider								●	
Prostigmata sp.1	Red mite			●						
Pseudoscorpionida sp.	Pseudoscorpion		●							
Salticid sp.	Jumping spider			●						
Sidymella sp.	Square End spider								●	
Sorensenella sp.	Short leg harvestman		●							
Steatoda capensis	False katipo								●	
Supunna picta	Spider			●						
Uliodon sp.	Vagrant spider		●							
<b>Springtails (4)</b>		<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
Docrytominae sp.	Collembola		●							
Entomobryidae sp.	Collembola		●							
Hypogasturidae sp.	Collembola									●
Isotomidae sp.	Collembola									●
<b>Stick insects (1)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Clitarchus hookeri	Stick insect					●				
<b>Tunicates (1)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
Aplidium sp.	Tunicate									●
<b>Wasps, bees and ants (11)</b>		<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>
Amblyopone australis	Ant								●	
Apis mellifera	Honey Bee		●							
Bombus ruderatus or terrestris	Bumble bee			●						
Bombus sp	Bumble bee					●			●	
Braconid sp.	Wasp								●	
Pachycondyla castanea	Ant		●							
Polistes chinensis	Asia paper wasp								●	
Priocnemis monachus	Spider hunting wasp								●	
Prolasius advena	Small brown bush ant									●
Rhytidoponera chalybaea	Ant								●	
Vespula vulgaris	Common wasp								●	

Apis mellifera





# SPECIES LIST

## Plants (263)

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Brown algae (7)</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
Carpophyllum maschalocarpum	Flapjack					●				●
Cystophora torulosa	Bladder Zigzay					●				
Durvillaea antarctica	Bull kelp					●				●
Ecklonia radiata	Common kelp					●				
Hormosira banksii	Neptune's necklace									●
Leathesia sp.	Alga									●
Nereocystis luetkeana	Bull kelp	●								
<b>Conifers (3)</b>		<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Dacrycarpus dacrydioides	Kahikatea	●	●			●	●			
Pinus radiata	Radiata pine		●	●						●
Podocarpus totara	Totara					●				
<b>Cyanobacteria (1)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
Anabaena sp	Blue green algae								●	
<b>Ferns (35)</b>		<b>0</b>	<b>24</b>	<b>1</b>	<b>0</b>	<b>24</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>2</b>
Adiantum cunninghamii	Maidenhair fern		●			●				●
Arthropteris tenella	Jointed fern		●				●			
Asplenium bulbiferum	Hen and chicken fern		●			●	●			
Asplenium flaccidum	Drooping spleenwort		●			●				
Asplenium hookerianum	Spleenwort		●			●				
Asplenium oblongifolium	Shining spleenwort		●			●	●			
Asplenium polyodon	Sickle spleenwort		●				●			
Blechnum chambersii	Lance fern, nini, rereti		●			●	●			
Blechnum filiforme	Thread fern, climbing hard fern		●			●	●			
Blechnum fluviatile	Kiwikiwi, creek fern					●				
Blechnum novae-zelandiae	Kiokio, palm leaf fern					●	●			
Blechnum parrisiae	Rasp fern					●				
Blechnum triangularifolium	Kiokio, green bay kiokio					●				
Blechnum zeelandicum			●							
Cyathea dealbata	Silver fern		●			●	●			●
Cyathea medullaris	Mamaku		●			●	●			
Dicksonia squarrosa	Wheki		●				●			
Diplazium australe						●	●			
Hymenophyllum demissum	Drooping filmy fern		●							
Lastreopsis glabella	Smooth shield fern						●			
Lastreopsis velutina	Velvet fern		●							
Leptopteris hymenophylloides	Crape fern		●							
Microsorium pustulatum	Hounds tongue		●	●		●				

Blechnum chambersii



# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Ferns (35) - continued</b>		<b>0</b>	<b>24</b>	<b>1</b>	<b>0</b>	<b>24</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>2</b>
Microsorium scandens	Fragrant fern, mokimoki						●			
Notoگرامmitis heterophylla	Strap Fern					●				
Paesia scaberula	Lace fern, ring fern		●							
Pellaea rotundifolia	Round leafed fern		●			●	●			
Pneumatopteris pennigera	Gully fern		●			●	●			
Polystichum oculatum						●				
Polystichum vestitum	Punui, prickly shield fern					●				
Polystichum wawranum			●			●				
Pteridium esculentum	Bracken					●				
Pteris macilenta	Sweet fern		●							
Pteris tremula	Shaking brake		●			●	●			
Pyrrhosia eleagnifolia	Leatherleaf fern		●			●	●			

<b>Flowering plants (195)</b>		<b>11</b>	<b>71</b>	<b>45</b>	<b>0</b>	<b>86</b>	<b>63</b>	<b>3</b>	<b>1</b>	<b>28</b>
Acacia dealbata	Wattle			●						
Acacia sp	Wattle									●
Acaena novae-zelandiae	Piripiri		●							
Acaena sp	Bidibid					●				
Alectryon excelsus	Titoki		●			●	●			
Anagallis arvensis	Pimpernel					●				
Apium prostratum	NZ celery			●						
Apodasmia similis	Jointed wire rush, Oioi			●						
Aristolelia fruticosa	mountain wineberry						●			
Asparagus scandens	Climbing asparagus			●						
Atriplex patula	Orache			●						
Australina pusilla	Australian pusilla									
Austrolittorina antipoda	Periwinkle									●
Avicennia marina	Mangrove			●						
Beilschmiedia tawa	Tawa		●			●	●			
Berberis glaucocarpa	Barberry						●			
Berberis sp	Barberry					●				
Bolboschoenus sp.				●						
Brachyglottis repanda	Rangiora					●				●
Cakile edentula var. edentula	Sea rocket			●						
Calystegia sepium subsp. roseota	Pink bind weed						●			
Calystegia soldanella	Shore bindweed, rauparaha			●						
Calystegia tuguriorum	Climbing convolvulus, NZ bindweed						●			
Cardamine debilis	NZ bitter cress		●							
Carex dissita	Forest sedge		●							
Carex divulsa	Grey sedge		●							

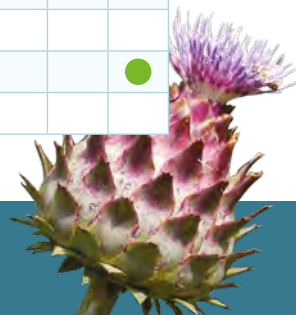
Acacia dealbata



# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Flowering plants (195) - continued</b>		<b>11</b>	<b>71</b>	<b>45</b>	<b>0</b>	<b>86</b>	<b>63</b>	<b>3</b>	<b>1</b>	<b>28</b>
Carex geminata	Cutty grass, rautahi					●				
Carex lessoniana	Cutty grass, rautahi		●							
Carex pumila	Carex pumila			●						
Carex secta	Carex secta		●							
Carex virgata	Carex virgata		●				●			
Carpodetus serratus	Putaputaweta		●			●	●			
Chenopodium album	Fathen			●						
Chrysanthemoides manicifera	Boneseed			●						
Cirsium arvense	Californian thistle					●				
Cirsium vulgare	Scottish thistle			●		●	●			
Clematis cunninghamii	Clematis		●							
Clematis forsteri	Forster's clematis					●				
Collospermum hastatum	Kahakaha		●				●			
Convolvulus sp	Convolvulus									●
Coprosma areolata	Thin-leaved coprosma		●				●			
Coprosma repens	Taupata	●				●				
Coprosma rhamnoides			●			●				
Coprosma rigida			●			●	●			
Coprosma robusta	Karamu		●	●			●			●
Coprosma spathulata			●			●				
Coprosma tenuicaulis	Swamp coprosma, hukihuki						●			
Cordyline australis	Cabbage tree, Kouka	●	●	●		●	●			
Cordyline banksii	Tikauka									●
Coriaria arborea	Tutu		●							●
Coriaria sp	Tutu	●								
Cortedaria seloana	Pampas			●			●			
Corynocarpus laevigatus	Karaka	●	●			●	●			●
Cotoneaster glaucophyllus	Cotoneaster									●
Crateagus monogyna	Hawthorn						●			
Cyperus eragrostis	Umbrella sedge					●	●			
Cyperus ustulatus	Giant umbrella sedge		●			●	●			
Dactylis glomerata	Cocksfoot						●			
Delairea odorata	German ivy									●
Dichondra (bravifolia or repens?)	Dichondra					●				
Digitalis purpurea	Foxglove					●				
Disphyma australe	Native ice plant					●				
Dysoxylum spectabile	Kohekohe		●			●	●			
Elaeocarpus hookerianus	Pokaka						●			
Entelea arborescens	Whau		●			●				●
Erigeron karvinskianus	Mexican daisy		●			●	●			

Cirsium arvense



# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Flowering plants (195) - continued</b>		<b>11</b>	<b>71</b>	<b>45</b>	<b>0</b>	<b>86</b>	<b>63</b>	<b>3</b>	<b>1</b>	<b>28</b>
Euphorbia peplus	Milkweed					●				
Ficus carica	Fig					●				
Foeniculum vulgare	Fennel									●
Fragaria vesca	Strawberry						●			
Freycinetia banksii	Kiekie		●				●			
Gahnia lacera	Cutty grass					●				
Gahnia procera	Giant sedge		●							
Galium avense	Cleavers					●				
Geniostoma rupestre	Hangehange		●			●				
Griselinia lucida	Puka		●				●			
Haloragis erecta	Haloragis					●	●			
Hebe stricta	Koromiko					●				●
Hedycarya arborea	Pigeonwood		●			●	●			
Helichrysum lanceolatum						●				
Hoheria angustifolia	Narrow leaved lacebark						●			
Hoheria populnea	Lacebark						●			
Hoheria sexstylosa	Lacebark, hohera		●			●				
Hoheria sp.	Lacebark			●						
Hydrocotyle elongata	Hydrocotyle					●	●			
Hydrocotyle sp.						●				
Hypericum androsaemum	Tutsan						●			
Jovellana sinclairii	NZ calceolaria						●			
Juglans ailantifolia	Japanese walnut			●						
Juncus edgariae	Wiwi, Edgars rush		●							
Juncus sp.	Juncus			●			●			
Knightia excelsa	Rewarewa		●							
Kunzea robusta	Kanuka		●			●	●			●
Lagenophora pumila	Papataniwhaniwha					●				
Laurelia novae-zelandiae	Pukatea		●				●			
Leptospermum scoparium	Manuka									●
Leucopogon fasciculatus	Mingimingi					●				
Libertia sp.	NZ Iris					●				
Linum bienne	Pale flax					●				
Lonicera japonica	Japanese honeysuckle									●
Lophomyrtus obcordata	Rohutu						●			
Lotus pedunculatis	Lotus			●						
Lycium ferocissimum	Boxthorn			●		●				
Machaerina sinclairii	Machaerina					●				
Machaerina sp.	Baumea					●				
Melicytus micranthus	Small flowered mahoe		●				●			

Fragaria vesca





# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Flowering plants (195) - continued</b>		<b>11</b>	<b>71</b>	<b>45</b>	<b>0</b>	<b>86</b>	<b>63</b>	<b>3</b>	<b>1</b>	<b>28</b>
Melicytus ramiflorus	Mahoe		●	●		●	●			●
Mentha	Pennyroyal					●				
Metrosideros carminea	Crimson rata		●							
Metrosideros colensoi	Rata						●			
Metrosideros diffusa	Rata						●			
Metrosideros excelsa	Pohutukawa	●	●							●
Metrosideros fulgens	Climbing rata		●							
Metrosideros perforata	White rata		●				●			
Microlaena avenacea	Bush rice grass		●	●						
Muehlenbeckia australis	Pohuehue		●			●	●			
Muehlenbeckia complexa	Pohuehue	●		●		●	●			
Myoporum laetum	Ngaio		●							●
Myrsine australis	Red mapou		●			●	●			
Nestigus cunninghamii	Black maire		●							
Olearia rani	Heketara		●			●				
Olearia solandri	Coastal tree daisy					●				
Oplismenus imbecillis			●			●	●			
Ottelia ovaliflora	Swamp Lily							●		
Oxalis exilis	Creeping oxalis					●				
Oxalis sp	Oxalis			●						
Ozothamnus leptophyllus	Tauhinu		●			●				
Parsonsia capsularis	NZ jasmine						●			
Parsonsia heterophylla	NZ jasmine		●			●	●			
Paspalum dilatatum	Paspalum			●		●				
Passiflora tetrandra	NZ passionfruit						●			
Pennantia corymbosa	Kaikomako		●			●	●			
Peperomia tetraphylla			●							
Persicaria hydropiper	Water pepper		●			●		●		
Phoenix canariensis	Phoenix palm			●						
Phormium cookianum	Mountain flax, wharariki	●				●				●
Phormium tenax	Harakeke			●						
Physalis peruviana	Cape gooseberry					●				
Phytolacca octandra	Inkweed		●			●	●			
Piper excelsum	Kawakawa		●	●		●	●		●	●
Pittosporum cornifolium	Tawhirikaro		●							
Pittosporum crassifolium	Karo	●				●				●
Pittosporum ralphii	Pittosporum ralphii			●						
Pittosporum tenuifolium	Kohuhu		●			●				
Plagianthus divaricatus	Marsh ribbonwood			●						
Planchonella costata	Tawapou					●				

Metrosideros excelsa



# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Flowering plants (195) - continued</b>		<b>11</b>	<b>71</b>	<b>45</b>	<b>0</b>	<b>86</b>	<b>63</b>	<b>3</b>	<b>1</b>	<b>28</b>
Plantago major	Broad-leaved plantain						●			
Plantago raoulii						●				
Populus sp.	Poplar			●						
Potamogeton crispus	Curly leafed pond weed							●		
Prumnopitys taxifolia	Matai		●				●			
Prunella vulgaris	Selfheal					●				
Pseudognaphalium luteoalbum						●				
Pseudopanax crassifolius	Lancewood		●							
Pseudopanax arboreus	Five finger						●			●
Pseudopanax crassifolius	Horoeka, lancewood					●				
Pseudopanax lessonii	Coastal 5 finger Haupapa			●						
Ranunculus repens	Creeping buttercup		●			●				
Ranunculus sp.						●				
Rhopalostylis sapida	Nikau		●			●	●			
Ripogonum scandens	Supplejack		●				●			
Rubus cissoides	Bush lawyer						●			
Rubus fruticosus	Blackberry			●						●
Rubus schmidelioides	Tataramoa, bush lawyer					●				
Rubus sp.						●				
Rumex acetosa	Sorrell		●							
Rumex crispus	Curled dock		●							
Samolus repens	Sea primrose			●		●				
Sarcocornia quinqueflora subsp. Quinqueflora	Glasswort			●						
Scandia rosifolia	Scandia									●
Schefflera digitata	Pate									●
Selliera radicans	Remuremu			●						
Senecio angulatus	Cape Ivy									●
Senecio bipinnatisectus	Australian fireweed					●				
Senecio jacobaea	Ragwort					●				
Solanum mauritianum	Woolly nightshade		●							
Solanum nodiflorum	Small-flowered nightshade					●				
Sonchus oleraceus	Sow thistle			●						
Sophora microphylla	Kowhai					●				
Sophora tetraptera	Kowhai					●				●
Spinifex sericeus	Spinifex			●						
Stellaria media subsp. Media	Chickweed					●				
Stenotaphrum secundatum	Buffalo grass			●						
Streblus heterophyllus	Turepo		●				●			
Tradescantia fluminensis	Wandering jew						●			
Typha orientalis	Raupo		●	●		●				
Ulex europaeus	Gorse		●	●		●				

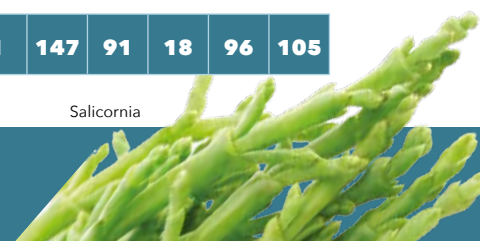
Sophora microphylla



# SPECIES LIST

Species Name	Common Name	Kaiaua Bay	Kaiaua Bush	Kaitawa Estuary	Mangatokerau	Opoutama Cooks Cove	Parkers Bush	Paroa Station	School Area	Tatarahake
<b>Flowering plants (195) - continued</b>		<b>11</b>	<b>71</b>	<b>45</b>	<b>0</b>	<b>86</b>	<b>63</b>	<b>3</b>	<b>1</b>	<b>28</b>
Uncinia sp.			●			●				
Uncinia uncinata	Hook seeded sedge		●				●			
Unknown Hebe	Unknown Hebe	●								
Unknown sand binder	Unknown sand binder	●								
Unknown sand dune weeds	Unknown sand dune weeds			●						
Unknown thistle	Unknown thistle			●						
Verbascum thapsus	Woolley mullein		●							
Vitex lucens	Puriri	●	●			●	●			
Yucca gloriosa	Soft tip yucca			●						
<b>Fungi (1)</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Salicornia	Salicornia			●						
<b>Green algae (3)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>
Nitella sp.	stonewort							●		
Ulva intestinalis										●
Ulva lactuca	Sea lettuce									●
<b>Liverworts (2)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
Monoclea forsteri	Liverwort					●				
Plagioiochila sp	Liverwort						●			
<b>Mosses (10)</b>		<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>
Camptochaete sp	Moss						●			
Cyathophorum bulbosum	Moss					●				
Echinodium sp	Moss		●				●			
Fissidens sp.	Moss					●				
Hypopterygium sp.	Umbrella moss					●				
Leucobryum javense	White moss		●							
Moss sp. 1	Unknown moss		●							
Moss sp. 2	Unknown moss		●							
Ptycomnion aviculare	Lush pipe cleaner moss					●				
Trachyloma sp	Moss						●			
<b>Red algae (2)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
Corallina officianalis	Corralline alga									●
Stictosiphonia sp.	Red algae									●
<b>Total Species Count</b>		<b>36</b>	<b>142</b>	<b>93</b>	<b>1</b>	<b>147</b>	<b>91</b>	<b>18</b>	<b>96</b>	<b>105</b>

Salicornia





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