



Ngā Kahurangi o Aotea

# Jewels of Aotea

a local guide

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Aotea / Great Barrier  
Local Board  
Auckland Council



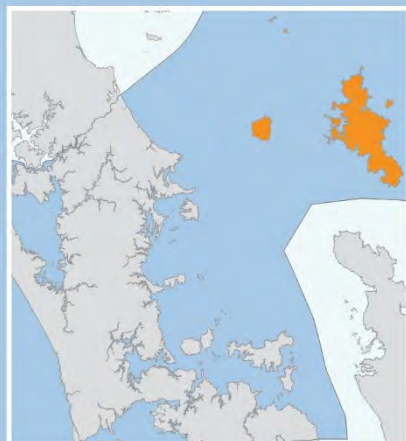
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Front cover image: Duvaucel’s Gecko, Sabine Bernet.

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## Aotea/Great Barrier Local Board area



# NATURE'S TREASURE

## JEWELS OF AOTEA



Part citizen science and part education, **'Jewels of Aotea'** aims to connect people with nature and showcase all the incredible taonga species that call Aotea home.

Have you seen a korimako or a kākāriki? What about a button daisy? Or imagine finding Adam's mistletoe! From plants and birds to reptiles and fish, and from the summit of Hirakimata to the coastline and sea surrounding the motu, Aotea is full of treasure.

Before exploring, remember to check your gear for pests and clean footwear to remove dirt and seeds.

[www.inaturalist.org/projects/jewelsofaotea](http://www.inaturalist.org/projects/jewelsofaotea)





Flame fungus: Sarah Giblin

## Introduction

Ko Aotea tētahi o ngā wāhi hihiko mōte kanorau koiora i Tāmaki Makaurau, me ōna raupapa hauropi e tino ahurei ana i te taiao moana ki ngā repo, ki ngā repo kōtae, ki ngā wao o te takutai, o te whenua tapotu, tae ake ki ngā wao pārūrū e kākahuria ana e te kapua i te tihi o Hirakimata (e 627m) me Tataweka (e 526m).

**Aotea is one of Auckland's most exclusive biodiversity gems, with incredibly unique ecological sequences from the marine environment to wetlands, alluvial swamps, coastal and lowland forest, up through to cloud forest surrounding the summits of Hirakimata (627m) and Tataweka (526m).**

Aotea / Great Barrier Island is situated 93 km northeast of Auckland and is the largest island within Tīkapa Moana – Te Moananui-ā-Toi / Hauraki Gulf at 285 km<sup>2</sup> with 12,000 hectares making up the Aotea Conservation Park.

While there are remnants of original forest in areas that weren't historically burnt or milled, much of Aotea suffered historical habitat modification, through burning, logging, mining, damming of streams and wetland drainage.



The forest understory was also severely modified through heavy goat and pig infestations. Goats were eradicated by 1992 and the forest is now in an advanced stage of regeneration.

Despite this, Aotea boasts nearly half of Aotearoa's vascular plant species and is the second-largest possum-free island in Aotearoa. Aotea also lacks other pests found on the mainland such as mustelids, hedgehogs, and Norway rats.

Pests that are present include feral cats, ship rats, kiore, and feral pigs.

This booklet highlights 41 special species found on Aotea, or in the waters surrounding Aotea.

Species are listed by the ecosystems in which they can be found, starting from the wetlands, and leading on to streams, forests, dunes, the coast and finally the ocean.

This booklet is the counterpart to "Pests of Aotea", which outlines the introduced pest plants and animals that threaten the island's biodiversity.



Fern sori: Sarah Giblin



Raupo Reedland, Kaitoke: Renee Freeland

Nga kahurangi o ngā repo

## Jewels of the Wetlands

**Historically, Aotea has been significantly affected by burning and logging of forests, mining, gum digging, and draining of wetlands to create farmland. However, Aotea still has extensive freshwater wetlands, saltmarsh, and dunelands, which are rare habitat types nationally.**

Wetland ecosystems on Aotea range from Raupo reedlands and tanglefern scrublands to seasonally wet sedgeland. These wetland ecosystems are often found on the edges of streams, estuaries, and forests. Raupo reedlands are extensive on Aotea and can be seen along the roadside in Medlands, Kaitoke, and Whangaparapara.

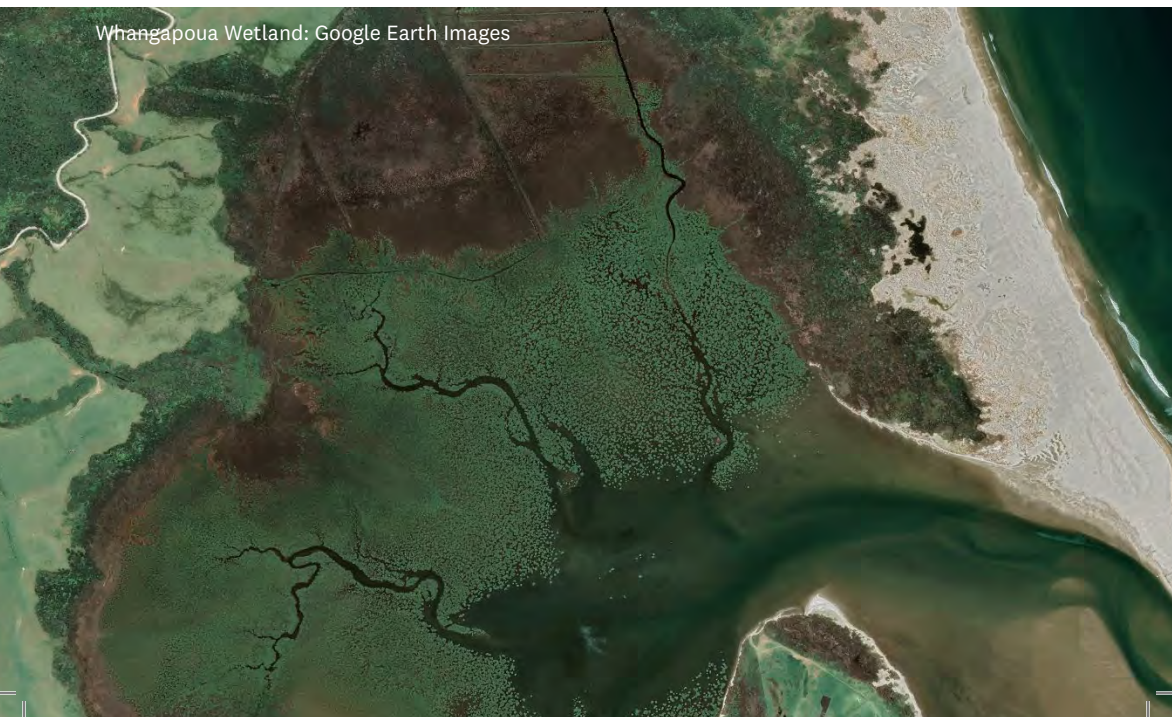
Kaitoke Swamp, which covers approximately 320 hectares, is the most ecologically significant and largest freshwater wetland on Aotea. It includes breeding sites for threatened or unusual bird species such as pāteke/brown teal, matuku hūrepo/Australasian bittern, mioweka/banded rail, and



pūweto/spotless crane. Some of the largest global populations of mātātā/ North Island fernbird are also found within the mānuka dominated wetland ecosystems along the margins and in the upper reaches of Kaitoke Swamp. The swamp is also an important link in the indigenous ecosystems of the island.

Whangapoua estuary on the northeastern side of Aotea is Auckland's largest estuarine ecosystem with mangroves, saltmarsh, salt-meadow and shallow tidal flats making it a significant feeding place for many nesting and migratory birds. This wetland is protected on the eastern side by a sandspit and sandy beach with extensive sand dunes. Inland, the estuary transitions into large freshwater wetland mosaics. The healthy vegetation, with its rich species diversity and intact sequences from one ecosystem to another, is of extremely high biodiversity value.

Other wetland areas of note are Oruawharo/Medlands and Awana creek. Wetlands form a critical connection between our land and water, support an incredible array of plants and animals, and have important benefits such as improving water quality and protecting against floods. They also store large amounts of carbon and therefore are an essential ecosystem for reducing the impacts of climate change.



Whangapoua Wetland: Google Earth Images



# Matuku hūrepo

## Australasian bittern

*Botaurus poiciloptilus*

**Special fact!** Fewer than 900 birds are left in NZ.

**Features:** Poor flyers, sensitive to disturbance, pose in a ‘freeze’ stance when threatened.

**Feeding:** Invertebrates, frogs, lizards and fish.

**3-5 eggs:** August – December.

**Threats:** Wetland drainage, poor water quality, mammalian predators, reduced food availability.

**Height:** 74cm.

**Weight:** 900-1400g.

**Status:** New Zealand native.

**Threatened:** Nationally critical.

**Where:** Wetlands, saltmarshes, drains and pasture.



Matuku hūrepo Mike Soper



# Pāteke

## Brown teal

*Anas chlorotis*

**Special fact!** Males are easily distinguishable from females in their breeding plumage with their iridescent green heads and chestnut-coloured breasts.

**Features:** Poor flyers, territorial, monogamous.

**Feeding:** Invertebrates, fungi, vegetation and seeds. On Aotea pāteke have been observed prising open the shells of cockles to extract the flesh.

**3-9 ducklings:** July – September.

**Nest:** In dense rushes and forests, often making nests at the base of ponga trunks, under the skirted remains of fallen fronds.

**Threats:** Mammalian predators, habitat degradation, domestic pets, developing human settlement.

**Size:** 48cm.

**Weight:** 580 – 600g.

**Status:** New Zealand endemic.

**At risk:** Recovering.

**Where:** Wet forests, swamps, slow-flowing streams, lakes, estuaries and pasture.



Pāteke: Renee Freeland





# Mioweka/Konini

## Banded rail

*Gallirallus philippensis*

**Features:** Strong but reluctant flyers, monogamous, pairs share incubation, distinctive eye stripe and intricately patterned plumage.

**Feeding:** Marine, littoral and terrestrial invertebrates, feeding is associated with tidal movements.

**4-6 chicks:** September – March.

**Nest:** Rough platform of reeds.

**Threats:** Introduced predators, habitat degradation.

**Size:** 30cm.

**Weight:** 170g.

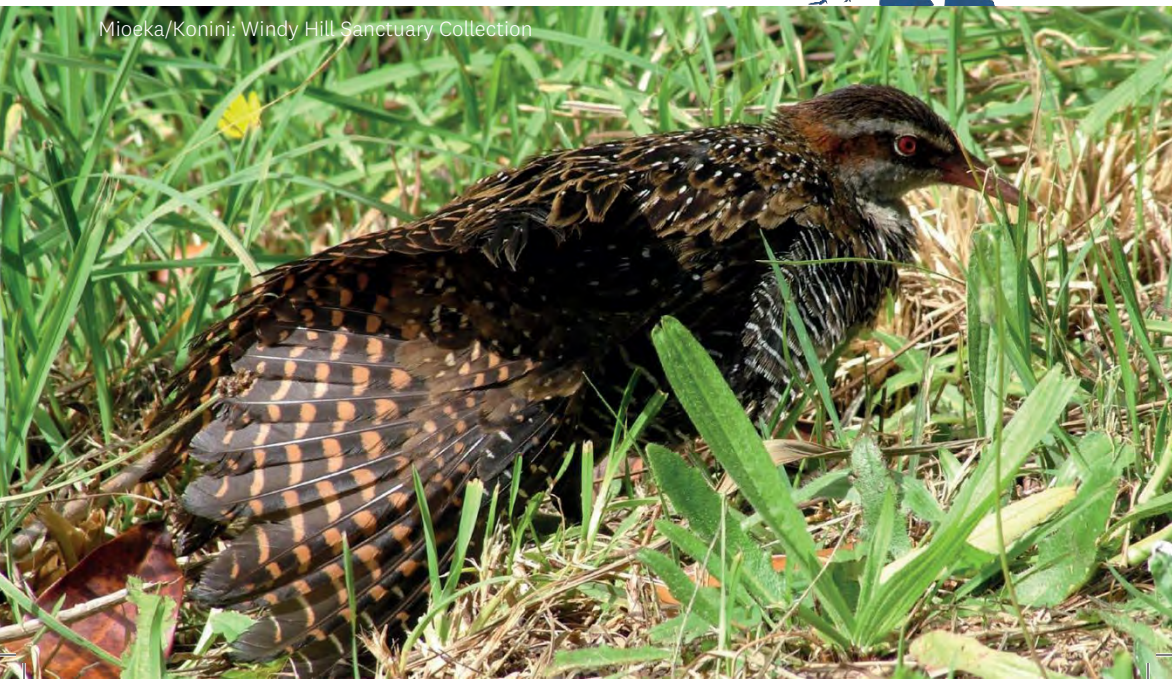
**Status:** New Zealand native.

**At risk:** Declining.

**Where:** Wetlands, scrublands, swamps and estuaries.



Mioweka/Konini: Windy Hill Sanctuary Collection





Mātātā: Oscar Thomas

# Mātātā

## Fernbird

*Megalurus punctatus*

**Special fact!** So well camouflaged, they are more often heard than seen. Revered by Maori as an oracle or 'wise bird', they would interpret the call of the Mātātā as an attestation of their daily activities.

**Features:** Small with long scruffy looking tails, predominantly streaked brown above with a paler tan colour below.

**Feeding:** Insects, spiders and other small invertebrates. Occasionally seeds and fruit.

**2-5 chicks:** November to February

**Nest:** Feather-lined cup of fine grass or sedge leaves in dense vegetation, usually less than 1 meter above ground or water.

**Threats:** Predation by rats, cats and nest disturbance by feral pigs. Destruction and degradation of native habitats is also a threat.

**Size:** 18cm.

**Weight:** 35gm.

**Status:** New Zealand endemic.

**At risk:** Declining.

**Where:** Dense, low wetland vegetation.



## Lady's tresses

Orchid family: Orchidaceae

*Spiranthes novae-zelandiae*.

**Special fact!** Extremely uncommon (only known from a single site).

**Features:** Perennial herb, erect, flowers spiralled around the stem.

**Flowers:** January – April. Fruiting: April – July.

**Threats:** Wetland drainage, invasive plants, absence of disturbance processes.

**Size:** Up to 1m tall at flowering.

**Status:** New Zealand endemic.

**At risk:** Nationally vulnerable.

**Where:** Coastal to montane, open areas, wetlands, peat bogs, stream banks and tussock grasslands.



# Pūweto

## Spotless crane

*Porzana tabuensis*

**Special fact!** Adults fake injuries to distract predators from their young.

**Features:** Distinctive red eye, territorial, monogamous, pairs share incubation.

**Feeding:** Omnivorous, seeds, fruit, plants and invertebrates.

**2-5 chicks:** August – January.

**Nest:** Raised woven cup.

**Threats:** Wetland drainage, habitat degradation.

**Size:** 20cm.

**Weight:** 140g.

**Status:** New Zealand native. **At risk:** Declining.

**Where:** Dense wetlands and mudflats.



Pūweto: Oscar Thomas







Ngā kahurangi o ngā roma

## Jewels of the Streams

**The freshwater catchment on Aotea is extensive and is typically composed of andesitic (volcanic) rocks, small high-gradient waterways, a few rivers and well-developed flood plains and many permanent and ephemeral streams.**

Streams within native forest catchments tend to have the greatest ecological values and many of our streams reach the sea without passing through farmland or of course urban zones. Across Aotea, historic land modification through clearance means that there has been some habitat modification. In particular, the larger catchments; Awana, Kaitoke, Kaiaraara and Wairahi were dammed and sequentially flooded during the logging of kauri. Additionally, clearance by fire exposed soil to erosion and increased run-off.

However, an abundance of native fish can still be found within the system of waterways on Aotea. Many are diadromous – meaning they are reliant on a passage from fresh to salt water to complete their lifecycles.

Jewels within and around our streams include kōura, button daisy, chevron skink, giant kokopu, hochstetter's frog and glow worms. In fact, Aotea has at least 10 of the 57 species of freshwater fish found of Aotearoa, including multiple species of kokopu, inanga and tuna (long and short-finned eels). Galaxiids are all small and predominantly nocturnal, hiding under stones and banks during the day making them tricky to see. Nonetheless, streams come alive at night and after dark is a perfect time to head out and see some of Aotea's finest.





Button daisy: Pat Enright  
Button daisy flower: Marley Ford

## Button daisy

Daisy family: Asteraceae

*Leptinella tenella*

**Features:** Low growing, wildly creeping perennial herb, forms loose patches.

**Flowers:** Green/yellow August – November.

**Fruiting:** October – January.

**Threats:** Pest plants like Kikuyu, wetland drainage.

**Size:** Leaves 4-15mm, lamina up to 35mm long

**Status:** New Zealand native.

**At risk:** Declining.

**Where:** Lowland, usually on stream margins.

# Niho Taniwha

## Chevron skink



*Oligosoma homalonotum*

**Features:** Our largest skink has a lifespan of 20+years, terrestrial and arboreal, run and freeze anti-predator behaviour.

**Feeding:** Invertebrates.

**Threats:** Habitat modification, mammalian predators (including domestic cats), residential areas and vehicles.

**Size:** Length of 30+cm.

**Status:** Barrier islands endemic.

**Threatened:** Nationally vulnerable.

**Where:** Forests, riparian edges and streams.



Niho Taniwha: Windy Hill Sanctuary Collection







Kōura: Shaun Lee

# Kōura

## Freshwater crayfish

*Paranephrops planifrons*

**Special fact!** Female Kōura produce up to 200 eggs!

**Features:** Exoskeletons, well-camouflaged.

**Feeding:** Scavenger, invertebrates including aquatic snails.

**Threats:** Chemical pollution, predators, habitat destruction, white tail disease.

**Size:** 70mm.

**Status:** New Zealand endemic.

**Where:** Freshwater streams, lakes and swamps with mud or gravel substrate.



Kākahi: Lloyd Estler, some rights reserved (CC-BY-NC)

# Kākahi

## Freshwater mussels

*Echyridella menziesii*

**Special facts!** Kākahi depend on native fish; for part of their lifecycle they become fish parasites, attaching themselves to gills or fins of the host fish.

**Features:** Kākahi use their foot to move around, anchor themselves and burrow into sediment.

**Feeding:** Filter and deposit feeders. They feed on algae, zooplankton and other micro-organisms which drift in the water. They also feed on sediment particles covered in bacteria.

**Threats:** Loss of habitat associated with river regulation, eutrophication, and other types of pollution, and possibly through loss of the host fish on which completion of the life cycle depends.

**Size:** Up to 11cm.

**Status:** New Zealand endemic.

**At Risk:** Declining.

**Where:** Freshwater streams and lakes.

# Kokopu

## Giant kokopu

*Galaxiidae argentinus*

**Special fact!** The name “Galaxiidae” refers to the galaxy-like patterning on the Giant kokopu.

**Features:** Diadromous (migrating from fresh to salt water). Giant kokopu are primarily a coastal species and do not usually penetrate inland very far.

**Feeding:** Opportunistic, ranges from kōura to terrestrial insects such as spiders and cicadas.

**Breeding:** Eggs laid on riparian margins, fluctuating water tables required for hatching.

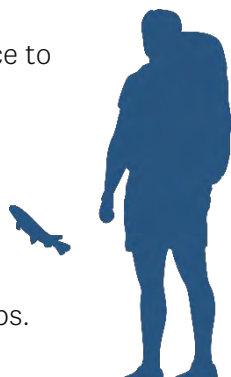
**Threats:** Agricultural expansion, exotic fish, disturbance to water flow, disturbance by pigs and humans.

**Size:** 20-35cm.

**Status:** New Zealand endemic.

**Threatened:** Data deficient.

**Where:** Coastal slow-moving streams, estuaries, swamps.



Giant Kokopu: Auckland Council







Hochstetter's frog: Windy Hill Sanctuary Collection

## Hochstetter's frog

*Leiopelma hochstetteri*

**Special fact!** Only NZ native frog to have a tadpole stage.

**Features:** Semi-aquatic, partially webbed toes, life span of 30 - 40 years, 4 - 22 eggs.

**Threats:** Habitat destruction by agriculture, forestry, sub-division and pigs causing stream siltation, rats, cats, diseases from introduced frogs.

**Size:** Males to 38mm and females to 50mm. Juveniles can be as small as 7mm long!

**Status:** New Zealand endemic.

**At risk:** Declining.

**Where:** Riparian edges and streams, native and plantation forests.



Entoloma hochstetteri: Wayne Lorimer

Ngā kahurangi o te wao

## Jewels of the Forest

**The forests of Aotea are a mosaic of forest types and ecosystems, ranging from areas of regenerating kanuka scrub, kauri-dominated forest, broadleaf gullies with an abundance of puriri, tarairi, tawa, and coastal forest. and pōhutukawa treeland.**

The montane podocarp forests, also known as cloud forests, are a distinctive ecosystem around the peak of Hirakimata. Named ‘Cloud forests’ due to the cloud cover it experiences, this environment is found on top of steep, rugged volcano summits where high rainfall and strong winds are common. This exposed ecosystem has low-fertility soils and a humid and cool environment. Here on Aotea it is also home to rare seabird burrows.

Closer to the sea, salt spray, exposure to winds and steep, dry slopes are key factors that influence the distribution and extent of coastal forest and pōhutukawa treeland.

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As mentioned previously, Aotea is home to one-quarter of the native vascular flora of Aotearoa. This significant number is likely due to the island's diverse habitats. The flora ranges from the presence of island endemics to an abundance of rata, yellow-silver pine, mountain toa toa, kauri and manoa. Hirakimata summit and the Harataonga scenic reserve are amongst the most diverse forests in the Auckland region. Subsequently, the forests support a biodiverse community.

*Metrosideros parkinsonii*, a climbing rata found only on Aotea around Hirakimata and in Westland, South Island is a great example of the treasures on Aotea. Other jewels found here include the long-tailed bat, black petrel, red-crowned kākāriki, peripatus and endemic jewels such as Aotea Great Barrier Island kanuka, tree daisy, and the paua slug.





Aotea Great Barrier Kanuka: Robyn Scott  
Aotea Great Barrier Kanuka flower: Jack Warden

# Kanuka

## **Aotea Great Barrier kanuka**

Myrtle family: Myrtaceae

*Kunzea sinclairii*

**Features:** 3m x 1m sprawling silvery-grey shrub, hairy leaves, trailing branches, clustered white flowers with dark centres from September – January.

**Fruiting:** February – July, minute wind dispersed seed.

**Threats:** Forest succession.

**Status:** Aotea endemic.

**At risk:** Naturally uncommon.

**Where:** Open shrubland and exposed rhyolite rocky outcrops.





Aotea Great Barrier Tree Daisy and flower: Jack Warden

## Aotea Great Barrier tree daisy

Daisy family: Asteraceae

*Olearia allomii*

**Features:** Shrub with broad leathery leaves.

**Flowers:** large clusters of white flowers from September – December.

**Threats:** Forest succession.

**Status:** Aotea endemic.

**At risk:** Naturally uncommon.

**Where:** Open shrubland and exposed rhyolite rocky outcrops.





# Tākoketai

## Black petrel

*Procellaria parkinsoni*

**Special fact!** Aotea holds the largest population of Tākoketai with an estimated 1000 breeding pairs.

**Features:** Solitary or small flocks at sea.

**Feeding:** Surface feeding by shallow dives, on squid, fish and crustaceans.

**1 egg:** November – January.    **Nest:** Burrows.

**Threats:** Feral cats, pigs, rats, fisheries by-catch.

**Size:** 46cm.    **Weight:** 700g.

**Status:** New Zealand endemic.

**Threatened:** Nationally vulnerable.

**Where:** Great Barrier and Hauturu-o-Toi Little Barrier Island, migrates to the eastern Pacific Ocean (July – October).



Takoketai: Biz Bell

# Pekapeka

## Long tailed bat

*Chalinolobus tuberculata*



**Special fact!** Can fly up to 60 kmh.

**Features:** Low frequency echolocation 40khz, life span of 20+ years.

**Feeding:** Hawking (capturing aerial insects).

**Mating:** February – March, single pups emerge. December – January, roosts in cavities and loose bark of large canopy trees in groups of up to 120 female bats.

**Threats:** Introduced mammalian predators, domestic animals, habitat destruction through logging.

**Size:** Wingspan 250cm.

**Weight:** 8-14 g.

**Status:** New Zealand endemic.

**Threatened:** Nationally vulnerable.

**Where:** Native and plantation forests.



Pekapeka: Sabine Bernet



# Carabid beetle

*Mecodema aoteanoho*

**Special fact:** Although they have ridged wing covers (elytra), the elytra are fused making this beetle, like many carabid beetles flightless.

**Features:** They are nocturnal predators and scavengers that are dull to shiny black in colour.

**Feeding:** A range of ground and soil-dwelling invertebrates.

**Breeding:** spring to summer.

**Threats:** Habitat loss and predation by introduced mammals.

**Size:** 19-24 mm length, 5.5-7 mm width.

**Status:** At risk, nationally uncommon.

**Where:** Native broadleaf forests.



Mecodema aoteanoho: Keegan Tinsel





## Paua slug

Land snail family: Rhytididae

*Schizoglossa novoseelandica barrierensis*

**Special Fact:** like a paua, paua slugs are a gastropod but the resemblance of the shell is a coincidence. Gastropods are members of a class of animals called Gastropoda. Their name comes from the Latin words gastro (meaning stomach) and pod (meaning foot). Their foot isn't a foot like a human foot, but rather a muscular body part that helps them to move around.

**Features:** Land slug, vestigial shell (not used).

**Feeding:** Predatory carnivore.

**Breeding:** Eggs with a calcareous surface.

**Threats:** Introduced pigs and rats, birds and habitat destruction.

**Size:** 20mm long, 13mm wide and 6mm high.

**Status:** Aotea endemic.

**At risk:** Data deficient.

**Where:** Native broadleaf and coastal forests.

# Kākāriki

## Red-crowned parakeet

*Cyanoramphus novaezelandiae*



**Special fact!** There are five different species of native parakeet in NZ.

**Features:** Parrot, monogamous, mostly green, strong flyers.

**Feeding:** Insect larvae, seeds, fruit, invertebrates and flowers.

**4-9 eggs:** November – January.

**Nest:** Cavities in trees, cliffs and dense vegetation.

**Threats:** Introduced mammalian predators, hybridisation, beak and feather disease.

**Size:** 25-28cm.

**Weight:** 70-80g.

**Status:** New Zealand endemic.

**At risk:** Relict.

**Where:** Offshore islands, tall forests, grasslands and scrublands.



Kākāriki: Sabine Bernet





Ngaokeoke: Dylan van Winkle

# Ngaokeoke

## Velvet worm peripatus

*Peripatoides sp.*

**Special fact!** Known as ‘living fossils’ they have not changed for 500 million years.

**Features:** Cautious and slow-moving.

**Feeding:** Shoot out jets of sticky fluid to trap insects.

**Breeding:** Live births.

**Threats:** Habitat loss, increased dry periods caused by climate change, collectors, diseases, rats, pigs and cats.

**Size:** 5-20mm.

**Status:** New Zealand endemic.

**At risk:** Data deficient.

**Where:** Damp environments with logs and leaf litter.





Duneland Kaitoke: Sarah Giblin

Ngā kahurangi o ngā tāhuahua

## Jewels of the Dunes

**Coastal dunes are commonly found immediately inland of a beach and are made up of large accumulations of sand. Dunes form as wind moves sand and sediments from the shoreline, depositing them wherever a land barrier stops it.**

Dry beach sand is moved inland by wind and trapped by dunes and their plants. To form, sand dunes need coastal areas where there is shelter from strong waves, a good supply of sand, onshore winds, and dune-binding plants such as grasses and sedges.

Coastal foredunes are the most dynamic part of a dune system and are the natural habitats of a range of insects, lizards and birds, as well as many very specialised plants that help to maintain the dunes.

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From foredunes to backdunes, plant communities show significant differences as they make the connection from a coastal ecosystem to inland forest. Low growing sedge and rushes grade into woody ground cover species, followed by an increasing diversity of shrubs that merge into trees of increasing height as they progress inland. In their natural state, dunes provide effective protection to the land, and subsequently the species and people.

The dune ecosystems on Aotea are large and mostly intact. Characterised by large stands of spinifex and pīngao, plants that are adapted to salt-laden winds and which provide habitat for shorebirds such as oystercatchers, gulls, dotterels and terns. The dunes extend across the eastern coast of the island, including dunes lakes at Whangapoua, Kaitoke and Oruawharo. Their outer edges are covered by muehlenbeckia, which provides habitat for rare reptiles such as the moko, copper and shore skink. Jewels found within these ecosystems include the New Zealand dotterel, pīngao and hinarepe.





# Pīngao

## Golden sand sedge

Sedge family: Cyperaceae

*Fimbristylis spiralis*

**Special fact!** Māori use pīngao to weave bags, baskets and mats.

Features: Shortly creeping, harsh leaves, dune-building plant.

**Threats:** Competition from marram grass (*Ammophila arenaria*), trampling, dune compaction, vehicle traffic, browsing and seed destruction by rodents.

**Size:** 30-90cm.

**Status:** New Zealand endemic.

**At risk:** Declining.

**Where:** Coastal dunes, sloping unstable surfaces



Pīngao: Shanti Morgan





# Hinarepe

## Golden sand tussock

Grass family: Poaceae

*Poa billardierei*

**Special fact!** Named after Jacques Houttou de Labillardiere (1755-1834), 19th century French botanist who described several plants of Aotearoa.

**Features:** Fine, rolled drooping leaves, green-fading silver colour.

**Threats:** Mammalian grazing, coastal development, vehicles, pest plants (marram grass).

**Size:** 30-90cm.

**Status:** New Zealand native.

**At risk:** Declining.

**Where:** Coastal dunes, fore dunes.



Pōhuehue: Sarah Giblin, Pōhuehue flower Jon Sullivan

## Pohuehue

### **Muehlenbeckia complexa**

*Muehlenbeckia complexa*

**Special fact!** Pohuehue is a mid dune ground cover and provides shelter and food for several native creatures including the native copper butterfly that only lives on this species!

**Features:** Wiry vine that has tiny, dark green leaves and forms dense springy mats up to 1m high.

**Threats:** Competition from exotic grasses, habitat loss.

**Flowers:** August – September.

**Status:** New Zealand native.

**Where:** Coastal dunes.



# Tūturiwhatu

## Northern NZ Dotterel

*Charadrius obscurus*

**Special fact!** Aotea is also home to the smaller banded dotterel, which has a distinctive dark breast band.

**Features:** Territorial, feigns injury around nests and young.

**Feeding:** Marine and terrestrial invertebrates, occasionally small fish, mussels and crabs.

**2-3 eggs:** July and February.

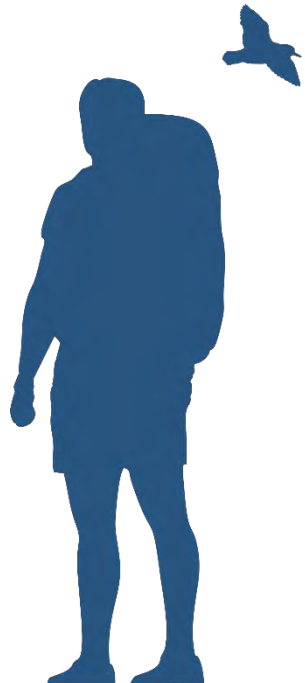
**Threats:** Egg and chick loss to introduced predators and black-backed gulls, habitat degradation, human disturbance, vehicles and domestic dogs.

**Size:** 25cm.    **Weight:** 145g.

**Status:** New Zealand endemic.

**At risk:** Recovering.

**Where:** Coastal dunes, beaches, shell banks and short pasture.



Tūturiwhatu: Renee Freeland





The coast of Aotea from Rakitu: Sarah Giblin

## Ngā kahurangi o te takutai

# Jewels of the Coast

**With a maximum length of 43 kilometres, Aotea has more than 300 km of coastline and protects Tikapa Moana - Te Moananui ā Toi to the west from the Pacific Ocean to the east. Subsequently, the island features highly contrasting coastal environments.**

The eastern coastline comprises long, sandy beaches, extensive dune systems, and at times heavy surf. The western coastline includes predominantly sheltered rocky bays. In general, the coastline is exposed to strong winds and sea spray, a unique environment characterised by dominant stands of pohutukawa, puriri and kohekohe, and moderately fertile soils.

From the coastal forest systems, down to rocky shores and sandy beaches the warm environment provides habitat for many resident and visiting or vagrant species including kuriri/pacific plover, matuku moana/reef heron, kotuku nutupapa/spoonbill. Other species, including little blue penguin, North Island kākā and kereru are also commonly found. Coastal plants make the most of the varying environments on offer with the Aotea endemic hebe, cook's scurvy grass and beach morning glory among others creating a vibrant landscape.





Koromiko: Shanti Morgan

# Koromiko

## Aotea Great Barrier Island hebe

Plantain family: Plantaginaceae

*Hebe pubescens ssp. rehuarum*

**Special fact!** Crushing the leaves in your fingers and breathing in the aroma is said to alleviate headaches.

**Features:** Bushy shrub, can be low-growing or erect.

**Flowers:** White/pink, August – July.

**Fruiting:** October – June, fine wind-dispersed seed.

**Threats:** Habitat destruction.

**Status:** Aotea Endemic.

**At risk:** Naturally uncommon.

**Where:** Coastal, rocky outcrops and cliff faces.

39 | Ngā Kahurangi o Aotea - he puka ārahi mō te rohe

# Tākapu

## Australasian gannet colony

*Morrus serrator*

**Special fact!** Gannets swim and fly almost their entire life in and above the sea, only coming on land to nest. Around 6000 nests were counted on Mahuki Island in 2017!

**Features:** Large, coastal seabird with predominantly white plumage, long wings and neck with slender body shape and buff yellow head plumage which extends down the neck.

**Feeding:** Fish.

**1 egg:** November – January.    **Nest:** Cliff ledge, mud nest.

**Threats:** Disturbance by introduced pests and humans.

**Wingspan:** 1.8m.

**Status:** New Zealand native.

**Where:** Tīkapa Moana – Te Moananui-ā-Toi, between the Mokohinau Islands to the north and the bottom of the Firth of Thames to the south, has a high concentration of colonies.



Tākapu colony: Tamzin Henderson





Kākā: Sabine Bernet

# Kākā

## Kākā/Bush parrot

*Nestor meridionalis*

**Special fact!** Māori named the kākā after its loud call.

**Features:** Longevity of 20+ years, strong flyers.

**Feeding:** Insect larvae, seeds, fruit, nectar, sap and honeydew.

**1-5 eggs:** September – January

**Nest:** Tree cavities.

**Threats:** Introduced predators particularly stoats, forest clearing.

**Size:** 38-44cm long.    **Weight:** 330-400g.

**Status:** New Zealand endemic.

**At risk:** Recovering.

**Where:** Forest dwelling.





Nau: Peter de Lange

## Nau/Ngau

### **Cooks scurvy grass**

Cabbage family: Brassicaceae

*Lepidium oleraceum*

**Special fact!** Cook's scurvy grass is so named because the plant was used to fight off scurvy (Vitamin C deficiency) by Captain Cook in 1769.

**Features:** Pungent, perennial herb, edible, high in vitamin C.

**Flowers:** White, September – March. **Fruiting:** December – April.

**Threats:** Reduction of seabird nesting grounds, introduced herbivorous insects, pest plants and fungus disease.

**Size:** Up to 50cm tall.

**Status:** New Zealand endemic.

**Threatened:** Nationally endangered.

**Where:** Coastal, well-manured soils high in guano, seabird nesting grounds and rock crevices.





Duvaucel's: Sabine Bernet

## Te mokomoko a Tohu

### Duvaucel's gecko

*Hoplodactylus duvaucelii*

**Special fact!** NZ's largest living gecko species.

**Features:** Life span of 35+ years.

**Feeding:** Large invertebrates (moths and weta), fruit and nectar.

**Breeding:** 1 - 2 live births per year.

**Threats:** Habitat loss and introduced predators.

**Size:** 300mm long.     **Weight:** 120g.

**Status:** New Zealand endemic.

**At risk:** Relict.

**Where:** Forest, scrub, cliffs, bluffs and coastlines.

# Kororā

## Little blue penguin

*Eudyptula minor*

**Special fact!** The world's smallest penguin species at an average of 33cm and 1kg.

**Features:** Loud calls can be heard around nest sites, solitary at sea, must return to shore every two weeks to moult.

**Feeding:** Dive for prey in waters around 50m deep, shoaling fish, squid and crustaceans.

**Breeding:** Monogamous pairs lay 1 - 2 eggs from July – November, pairs commonly reuse nest sites.

**Nest:** Burrows, caves and rock crevices.

**Threats:** Cats, rats and dogs, set nets, human settlement encroachment to coastlines, vehicles.

**Size:** 33cm.

**Weight:** 1kg.

**Status:** New Zealand native. **At risk:** Declining.

**Where:** Coastlines, ocean.

Kororā: Sarah Dwyer







Kāruhiruhi: Sarah Giblin

# Kāruhiruhi

## Pied shag

*Phalacrocorax varius*

**Special fact!** Unlike most other shag species, kāruhiruhi is reasonably calm, allowing close approach when roosting or nesting in trees.

**Features:** Predominantly black, the face, throat, sides of neck and underparts are white.

**Feeding:** Fish.

**Chicks:** 2 - 5.

**Nest:** In trees.

**Threats:** Habitat destruction, set nets, inshore long lines.

**Size:** 65 – 85cm.

**Weight:** 1.3 – 2.1kg.

**Status:** New Zealand native.

**At Risk:** Recovering.

**Where:** Coastlines, ocean.





Tara: Oscar Thomas

## Tara, Taranui

### White fronted and Caspian terns

*Sterna striata*, *Hydroprogne caspia*

**Features:** Tara are the most common tern species on the coast of Aotearoa and are often seen in large flocks. Taranui are the largest terns in the world (51 cm long), are silver-grey and have a very large, red bill.

**Feeding:** small surface-swimming and larval fish.

**1-3 eggs:** September - December

**Nest:** Tara and Taranui usually breed in large dense colonies, Taranui will also breed as isolated pairs, though often in association with other terns or gulls.

**Threats:** Feral cats, pigs, rats, fisheries by-catch.

**Size and Weight:** Tara: 42cm, 160g, Taranui: 50cm, 700g.

**Status:** Both Tara and Taranui are New Zealand native. Tara are At Risk, Declining. Taranui are Threatened, nationally vulnerable.

**Where:** Coast.





An expanse of ocean, looking towards Haututuru-o-Toi: Lydia Green



Ngā kahurangi o te moana

## Jewels of the Ocean

**Aotea sits with the open and deep Pacific Ocean to the east with comparatively sheltered and shallow Tikapa Moana – Te Moananui-ā-Toi to the west. The Aotea group also includes fifty islands and islets.**

The sea closely surrounding Aotea is also part of Tikapa Moana, a marine park that was established in 2000 and covers an area of more than 1.2 million hectares.

Tikapa Moana is considered one of the most diverse marine parks. Millions of creatures populate the waters within it, a food web from atomic-sized viruses to miniature phytoplankton and fungi, from multiple trophic levels to apex predators. About a quarter of the Southern Hemisphere's marine mammals have been recorded within this park. Many pelagic and migratory species feed in or pass through our moana, including migratory sharks, whale sharks, and spine-tailed devil rays. Resident dolphin populations and marine megafauna such as whales (including the critically endangered bryde's whale), orca, manta rays and seals are often seen. It is also visited annually by over 20% of the world's seabirds. Reef systems on the northeast coast include black coral colonies, diverse species of seaweed and encrusting species

The marine environment is increasingly damaged by overfishing, sediment, marine dumping, plastic pollution, and noise. Kina barrens have started to appear, and several invasive marine pests have been detected in the island's waters in recent years including mediterranean fanworm, Asian paddle crab, and more recently the seaweed caulerpa. All these things can severely impact the diversity of the ocean surrounding Aotea.

It is not all doom and gloom, you can do your bit to help these jewels of the ocean, from cleaning your the hull of your boat to learning to identify seaweed... 'If environmental practices improve, we can be very hopeful that we will leave a positive legacy for our future generations.'

# Terehu

## Bottlenose dolphin

*Tursiops truncatus*

**Special fact!** Terehu develop personalized whistles to communicate information regarding their location, condition and identity with others.

**Features:** Short beaks, single blowhole and a moderately hooked dorsal fin.

**Feeding:** Fish, squid, shrimp.

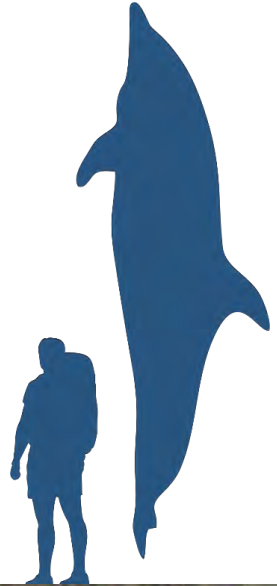
**Breeding:** Every 3 to 6 years after a 12-month gestation period.

**Threats:** Very susceptible to human impacts due to their coastal and inquisitive nature.

**Size:** 4m.

**Weight:** 640 kg.

**Status:** data deficient, IUCN Red List – endangered.



Terehu: Sarah Dwyer





Bryde's whale: Sarah Dwyer

# Tohorā tāwaka

## Bryde's whale

*Balaenoptera brydei*

**Special facts!** The correct way to pronounce the common name of the Bryde's whale is 'brooders'.

**Features:** Three prominent ridges in front of their blowhole. Sleek bodies and sleek, pointed flippers.

**Feeding:** Fish, krill and plankton.

**Breeding:** Late winter to early spring calving season on Aotearoa's northeastern coast, or in nearby oceanic Pacific waters. In South African waters, the inshore population of Bryde's whales breeds throughout the year and the offshore population only during autumn.

**Threats:** Ship strikes, entanglement in fishing gear and overfishing.

**Size:** 13 m.      **Weight:** 20 - 30 t.

**Threatened:** Nationally Critical.





Tītī

## Cooks petrel

*Pterodroma cookii*



**Special fact!** Like many seabirds Cook's petrels formerly bred throughout Aotearoa, on mountain tops and ranges. They are now found on three islands. Hauturu / Little Barrier Island, Aotea and Whenua Hou / Codfish Island.

**Features:** small grey and white petrel with narrow wings and a pointed tail in flight. The eye is dark, the legs are dull blue grey with yellowish webs and black margins.

**Feeding:** Small crustaceans, squid and fish.

**1 egg:** October - December.

**Nest:** Burrows.

**Threats:** Introduced predators; Feral cats, pigs, rats.

**Size:** 28 cm.

**Weight:** 180 g.

**Status:** New Zealand endemic.

**At Risk:** Relict



Tītī: Oscar Thomas





Totorore (above) and Pakahā (right): Oscar Thomas

## Toanui, Pakahā, Totorore

### **Flesh footed, fluttering and little shearwaters**

*Ardenna carneipes, Puffinus gavia, Puffinus assimilis*

**Special facts!** These birds do not breed on Aotea but can be found in the waters in and around the island group. They are clever hunters who follow whales to be sure of a meal. The whales' feeding activity brings the fish closer to the surface, so the shearwaters can swoop down and catch them. So, if you see shearwaters feeding in a group, there's a good chance a whale could be nearby.

**Features:** Toanui/flesh footed shearwaters are medium to large, dark seabirds with long powerful hooked bills. They nest on offshore islands around northern Aotearoa and in Cook Strait. They are attracted to boats and are commonly observed over inshore seas, especially in Tīkapa Moana – Te Moananui-ā-Toi.

Pakahā/fluttering shearwaters, with their distinctive 'flutter-glide' flight, are a ubiquitous seabird of inshore waters in the top half of Aotearoa. They are often seen in large fast-moving flocks while foraging.

Totorore/little shearwaters are not as well known, they are small, shy and do not flock like other shearwaters. Unlike Flesh-footed and fluttering shearwaters, little shearwaters are winter breeders.

**Feeding:** Small fish, squid and crustaceans.

**Nests:** Well-drained site or nest cavity lined with straw dead leaves, grass, twigs and feathers. There is little information about totorore nests, however Kermadec totorore are known to nest in burrows.

**Threats:** Feral cats, pigs, rats, fisheries by-catch, oil spills and overfishing all contribute to the threats these birds face.

**Size and Weight:** Toanui: 45cm, 700g, pakahā: 37cm, 365g, Totorore: 28cm, 240g.

**Status:** Toanui and totorore are New Zealand native, pakahā are New Zealand endemic. All three species are considered at risk.

Toanui: Sarah Dwyer







Ōi: Oscar Thomas

Ōi

## Grey faced petrel

*Pterodroma gouldi*

**Special facts!** These birds have a short but powerful deeply hooked beak that can slice through squid.

**Features:** The Ōi/grey-faced petrel is a large dark gadfly petrel with long narrow wings and a long-pointed tail.

**Feeding:** Predominantly squid, also crustaceans and fish.

**1 egg:** July–June.

**Nest:** Burrows.

**Threats:** Feral cats, pigs, rats and human disturbance of nests.

**Size:** 42cm.

**Weight:** 550g.

**Status:** New Zealand native.

**Where:** One of the few burrowing petrels to still survive on mainland Aotearoa. Small colonies are scattered around the coasts of the upper North Island. The largest colonies occur on the Three Kings, Hen and Chickens, Mokohinau, Mercury and Alderman Island groups, and on Cuvier, Moutohora, White and East Islands.

# Honu kākāriki

## Green turtle

*Manta birostris*

**Special fact!** Turtles have temperature-dependent sex determination. The temperature of the sand determines if the hatchlings will be male or female.

**Features:** Green turtles are named for the greenish colour of their cartilage and fat, not their shells.

**Feeding:** They are the only herbivorous turtle, feeding mostly on seagrasses, algae and mangroves. Their hatchlings, however, are omnivorous eating a range of animals including jellyfish and fish eggs.

**Breeding:** About 110 eggs per nest. Can nest repeatedly over several months.

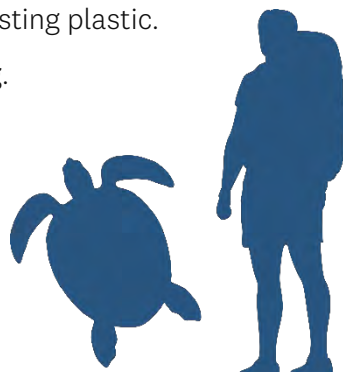
**Threats:** Fisheries bycatch, coastal development and overharvesting by humans. Some also die by ingesting plastic.

**Size:** 78 – 112cm.

**Weight:** 68 - 190kg.

**Status:** IUCN Red List – endangered.

**Where:** Some green turtles spend a part of Their life cycle around the northern North Island and are regularly seen in Tikapa Moana – Te Moananui-ā-Toi.



Honu kākāriki: Sarah Dwyer



# Oceanic manta ray

*Manta birostris*

**Special fact!** The largest rays, they are distributed worldwide, and inhabit both tropical and temperate oceans.

**Features:** Darker on the top side, and lighter on the underside. From above, oceanic manta ray have white shoulder markings that form a black 'T' shape on the top of their heads.

**Feeding:** Planktonic organisms.

**Breeding:** One pup every 2 to 5 years, after 12.5 months gestation.

**Threats:** Commercial fishing; The species both targeted and caught as bycatch in several global fisheries.

**Size:** 4 - 5m (max 7m).

**Weight:** Up to 2000kg.

**Status:** data deficient, IUCN Red List – endangered.

**Where:** Tīkapa Moana – Te Moananui-ā-Toi, is considered one of Aotearoa's oceanic manta ray hotspots. High numbers of manta rays are spotted in the waters between Hauturu (Little Barrier), Aotea, Hen and Chicken Islands, and the Mokohinau Islands.



Oceanic Manta Ray: Lydia Green







Adam's Mistletoe: Fanny Osbourne

LORANTHACEAE  
LORANTHUS.  
*L. Adamsonii* (620)

## Ngā kahurangi o mua

# Jewels of the Past

**This section explores species that are considered locally and functionally extinct on Aotea, meaning they no longer breed or reproduce on the island, or the island group.**

The most recent bird to be lost was kokako, when the last two males were caught by the Department of Conservation in 1996 and taken to Hauturu/Little Barrier Island to preserve the pair. While there is hope that the species may one day be translocated back to the island, for the moment, they are considered locally extinct.

Most bird species on this list are based on a survey conducted by Frederick Hutton when he visited Aotea in 1868. The birds lost since his visit (post European colonisation) are predominantly from forest habitats. Species

like the Toutouwai/North Island robin, once extinct, have been reintroduced and are not included here. Other species like the Tīeke/bellbird visit and occasionally breed, however records indicate they are functionally extinct, so they have been included. Miromiro/tomtits, once considered locally extinct are known to be present at the southern end of Hirakimata so are not included. Pīpī/brown creeper were recorded as present on Rakitu by Hutton, though reportedly not seen by him, so while they have been included in this list, some will conclude that it is unlikely they were ever here.

Additionally, there are numerous seabird species likely to have been present historically that have not been included on this list. Other species are more difficult to accurately table with less historical or recent information available. For example, the native snail and beetle populations, more research is needed to ascertain whether they are stable or declining.

We have likely lost several species, but it is difficult to confirm. The fact remains that our native species and their habitats need protection. So, if you care for our species you can help! Set a rat trap, pull a weed, and keep your cat inside and your dog on a lead. Every little bit counts! ***He iti te mokoroa, nāna i kati te kahikatea.*** The mokoroa (grub) may be small, but it cuts through the Kahikatea.



Kōreke/New Zealand quail  
(*Coturnix novaezelandiae*)



Adams mistletoe  
(*Trilepidia Adamsii*)



Dactylanthus  
(*Dactylanthus taylorii*)



Tūturuatu/shore plover  
(*Thinornis novaeseelandiae*)



Kōkako  
(*Callaeas wilsoni*)



Tīeke/Saddleback  
(*Philesturnus rufusater*)



Pīpipi/brown creeper  
(*Mohoua novaeseelandiae*)



Kākāriki/yellow-crowned parakeet  
(*Cyanoramphus auriceps*)



Pōpokatea/whitehead  
(*Mohoua albigilla*)



Titipounamu/rifleman  
(*Acanthisitta chloris*)



Hihi/stitchbird  
(*Notiomystis cincta*)



Korimako/bellbird  
(*Anthornis melanura*)



Kārearea/NZ falcon  
(*Falco novaeseelandiae*)



Robust skink  
(*Oligosoma alani*)



McGregor's skink  
(*Oligosoma macgregori*)



Tuatara  
(*Sphenodon punctatus*)

Image credits:

Koreke: Biodiversity Heritage Library, Adams mistletoe:  
Fanny Osbourne Collection, Auckland Museum,  
Dactylanthus: Marti, Bird species: Oscar Thomas, Reptile  
species: Nik Harker.



# Ngā pae tukutuku whaitake

## Useful websites

### Inaturalist – Jewels of Aotea

[inaturalist.org/project/jewelsofaotea](https://inaturalist.org/project/jewelsofaotea)

### Birds

<https://www.nzbirdsonline.org.nz/>

### Freshwater fish

<https://www.niwa.co.nz/freshwater-and-estuaries/nzffd/NIWA-fish-atlas>

### Reptiles

<https://www.doc.govt.nz/nature/native-animals/reptiles-and-frogs/>

### Plants

<https://www.nzpcn.org.nz/>

### Auckland Region Pests

<https://www.tiakitamakimakaurau.nz/protect-and-restore-our-environment/pests-in-auckland/>

<https://www.tiakitamakimakaurau.nz/pest-search/>

<https://www.conservationauckland.nz/pest-search/>

### Regional Pest Management Plan (RPMP) Statuses

<https://www.tiakitamakimakaurau.nz/protect-and-restore-our-environment/pests-in-auckland/about-the-regional-pest-management-plan-rpmp-statuses/>

### Kauri Dieback

<https://www.kauriprotection.co.nz/>

### Myrtle Rust

<https://myrtlerust.org.nz/>

### Marine pests

<https://www.marinepests.nz/>

# Ngā whakapānga whaitake

## Useful contacts

To report a pest plant, animal, freshwater or marine pest on Aotea email Auckland Council: [pestfree@aucklandcouncil.govt.nz](mailto:pestfree@aucklandcouncil.govt.nz)

If you think your trees have symptoms of kauri dieback, contact the Kauri Dieback Hotline on **0800 NZ KAURI** (0800 69 52874).

If you think your trees have symptoms of myrtle rust use the Myrtle Rust reporter on [Inaturalist](#) to confirm an identification.

### When to contact Ministry for Primary Industries (MPI)

The Ministry of Primary Industries is responsible for managing exotic pests when they enter our country. You can visit the MPI pest search to see if the pest is known to be in Aotearoa. If you see an exotic pest, or have information on them, notify (MPI) on **0800 80 99 66** or visit their website: <https://report.mpi.govt.nz/pest/>

From time to time, MPI will identify threats from new pest species. When there is a threat, they will lead a national response to prevent the new pest from establishing.

## Acknowledgements

Ngā mihi nui to all the people who have contributed images: Oscar Thomas, Sabine Bernet, Renee Freeland, Sarah Dwyer, Shanti Morgan, Jack Warden, Jeremy Warden, Sarah Giblin, Lydia Green, Wayne Lorimer, Windy Hill Sanctuary, Marley Ford, Keegan Tinsel, Elizabeth Bell, Shaun Lee, Jeremy Rolfe and Mike Soper, Tamzin Henderson, Nick Harker and Peter de Lange.

Thank you also to Aotea Great Barrier Island Environmental Trust for their input, John Ogden and Halema Jameson for their insights into the Jewels of the past.

# GET INVOLVED

Auckland Council is working towards eradicating and keeping out a number of high risk pest plant species from Aotea. We need your help to hunt these plants out.



Visit **inaturalist.org**

Join project **'Aotea High Risk Weeds'**

Identify and record your weedy find!



**1. FIND IT**  
**2. RECORD IT**

✉ pestfree@aucklandcouncil.govt.nz



# PROTECT OUR HAURAKI GULF



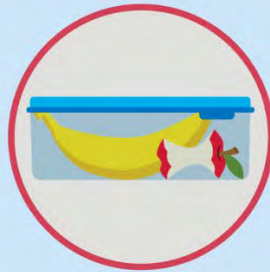
## Check

your belongings  
for pests



## Clean

your gear and/or  
boat before you go



## Close

all food in sealed  
containers



Visit [ourauckland.nz/haurakigulf](http://ourauckland.nz/haurakigulf)  
to learn more from Auckland Council.



Department of  
Conservation  
*Te Papa Atawhai*



# DOUBLE CHECK FOR MARINE PESTS



Check  
your hull



Check  
your anchor  
and gear

[marinepests.co.nz](http://marinepests.co.nz)

## Notes

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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**Booklet published by Auckland Council's Natural Environment Delivery Team  
with support from the Aotea Great Barrier Local Board, August 2024**