

# Cook Islands Biodiversity and Ethnobiology Database

The database is a freely available web-based multimedia database designed to integrate scientific and traditional knowledge information on all the plants and animals of the Cook Islands, be it native or introduced; terrestrial, marine, or freshwater.

The database can use a range of criteria to display subsets of species for special interest groups such as birds or fish, ornamentation or adornment use, invasiveness or island-level presence.

The database lists around 4,300 species (January 2019), which includes most of the species known to experts and recorded in publications. We estimate there are about 3,000 more species to be recorded. About 2,600 species have images to aid identification and other textual information and multimedia aids (video and audio) are growing slowly.

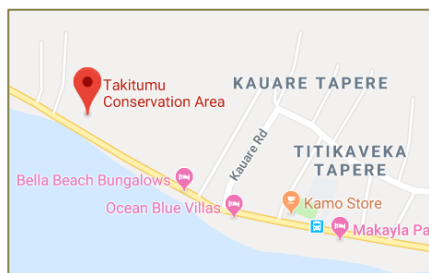
All information and images used in this booklet are taken from the database and for more information on the database or any species found in the Cook Islands or in the Takitumu Conservation Area please visit:

<http://cookislands.bishopmuseum.org>.

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## Takitumu Conservation Area Visitor Guide



Prepared for the Takitumu Conservation Area  
by the  
Cook Islands Natural Heritage Trust

# Acknowledgements

## Cook Islands Natural Heritage Trust



The CINHT is a programme of the Cook Islands Government: a) to collect and integrate scientific and traditional information on local plants and animals; and b) to preserve such information and make it available to the general public.

Initiated in 1990 and transferred to the CINHT in 1999, all information collected is publicly available at: <http://cookislands.bishopmuseum.org>.

## Cook Islands National Environment Service



The CINES is an agency of the Cook Islands Government responsible for the protection, conservation, and management of the environment and to ensure the sustainable use of natural resources.

Established under the Conservation Act 1975, the CINES implemented the initial *Kākerōri* recovery programme.

## Cook Islands Ridge to Reef Project



Implemented by the CINES with funding support from the Global Environment Facility and United Nations Development Programme, the project aims to improve environmental management across the Southern Cook Islands through the integration of environmental management values into the tourism, agriculture and fisheries sector.

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## Appreciation

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The CINHT and TCA would also like to appreciate the commitment of Mr. Ed Saul, Mr. Ian Karika, Ms. Linda Nia, the Landowners of the Takitumu Conservation Area and the volunteers and supporters of the Takitumu Conservation Area who have contributed to the conservation of the *Kākerōri* and its habitat.

## Threats to the TCA Wildlife

The threat posed by the Ship Rat (*Rattus rattus*) in the TCA continues to this day. Ship Rat likely arrived on European boats around the mid 1800's. This tree-climbing nocturnal rat has been linked to the extinction of many landbirds across the Pacific Island region. An omnivorous species, like most rats, the Ship Rat diet can adapt easily to any food sources present in its habitat.

The Polynesian Rat (*Rattus exulans*), introduced by the Early Polynesians as a food source is much smaller and typically more vegetarian than its larger Ship Rat cousin.

The area is regularly monitored for the presence of Ship Rat and poisoning stations are scattered throughout the TCA.

Although often cited as a cause of native bird decline, the impact that the Common Myna (*Manu Kavamani*) has on birds in the forest may be limited because the Common Myna does not establish breeding territories in the inland forests.

Maintaining suitable habitat is a priority for the protection of native species. It is imperative that we seek to balance our desires to develop land and resources in a way that does not take from our environment.



Ship Rat (*Rattus rattus*)



## Takitumu Conservation Area Visitor Guide

Cook Islands Natural Heritage Trust

## Overview of TCA

Located on the south-eastern side of inland Rarotonga, this privately owned and managed nature reserve covers an area of 155-hectares. The Takitumu Conservation Area (TCA) was established in 1996 by the landowning families of Kainuku, Manavaroa and Karika of Rarotonga for the conservation and protection of one of the world's most endangered birds, the endemic *Kākerōri* (Rarotonga Flycatcher) and its habitat.

Comprised of small valleys in the headwaters of streams which contain intact native forest with trees such as the endemic Cook Islands Homalium (*Mato*), Bischofia (*Koka*) and Mountain Lantern-tree (*Tūrīna*) and a dense understorey of Kingfern (*Āna'e*) and endemic Rarotonga Fitchia (*Neinei*), all of which is preferred habitat for Rarotonga Flycatcher (*Kākerōri*).

In addition to viewing the *Kākerōri*, the TCA provides visitors with an opportunity to see and hear other native bird life, including the endemic Rarotonga Starling (*Īoi*) and Cook Islands Fruit-dove (*Kūkupa*), Pacific Pigeon (*Rupe*) and the migratory Long-tailed Cuckoo (*Karavia*). Visitors will also usually see the Pacific Fruit-bat (*Moā Kirikiri*) which arrived on Rarotonga in the 1880's probably from Mangaia where it is native.

The TCA contains many of the plant species found in inland Rarotonga, including plants not found elsewhere in the world.

The conservation of the *Kākerōri* in what became the TCA began in 1987 as a joint initiative between the Cook Islands Conservation Service and the New Zealand Department of Scientific and Industrial Research (DSIR) which aimed to bring the bird back from the brink of extinction with only 38 birds left in existence.

The TCA continues to implement rat poisoning activities within the area and undertake regular *Kākerōri* population counts with assistance from the Cook Islands and New Zealand Government.



## Polynesian Freycinetia

*Freycinetia arborea*

## Kiekie

Native



An endemic climbing vine of Polynesia, the stem is usually woody with aerial roots which are used to attach to tree trunks. The leaves are simple, alternate, strap-shaped and are spirally arranged on the vine. The mid-rib is apparent, and the leaves can have fine teeth along the leaf edge. The dried roots were used for basket and fish trap weaving on Rarotonga. The flowers form on a medium-sized spike surrounded by orange-salmon coloured bracts. The fruit contain many seeds and is often eaten by introduced rats.

## Fernland Orchid

*Spathoglottis plicata*

Recent Introduction



A common terrestrial orchid with large long-oval corrugated leaves, growing on dry hill sides or in Tangle Fern (*Tuanu'e*) stands, it produces medium lilac-coloured flowers that are clustered at the end of a long stalk (to 75cm). The fruit is a cylindrical capsule with six grooves along its approximate 4cm length.

**King Fern**  
*Angiopteris evecta*

**‘Āna‘e**  
Native



The largest fern in the Cook Islands with fronds up to 2.5m in length. The fronds grow from a clumpy basal stock and is distinguished from a similar species, *Marattia salicina*, by having alternating, evenly pinnate leaves along the frond as opposed to opposite leaves.

**Smooth Bird's-nest Fern**  
*Asplenium nidus*

**Kōta‘a Tua-rua**  
Native



One of two species of Bird's-nest fern in the Cook Islands, its common name is a reference to its bird-nest shape. The long strap-shaped leaves are intact as opposed to most other ferns and distinguished from the Sharp Bird's-nest Fern by having a smooth curved mid-rib on the underside of the leaf and a large protruding mid-rib on the upper side, hence the Manganian name *Kōta‘a Tua-rua* meaning "two backs". The mid-rib on the other birds-nest fern being more angular.

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## Rarotonga Flycatcher

*Pomarea dimidiata*

## Kākerōri

Endemic



The flagship bird of the Takitumu Conservation Area, the Rarotonga Flycatcher (*Kākerōri*) is one of five native landbirds breeding on Rarotonga. Found only on Rarotonga and Ātiu, the *Kākerōri* is considered a species vulnerable to the threat of extinction. Its closest relatives occur in French Polynesia and all are subjected to the threat of extinction.

The *Kākerōri* is a small perching bird, around 14cm long and weighing 23g. Colouration varies with age, fledglings are covered in grey and white down and within 1 month of fledging they begin to develop their orange plumage, and brown wings. For the first year the base of the lower beak is pale yellow and by the second year they develop the pale steel-blue beak of the adults. The third-year orange birds assume a mixed plumage, grey with a few orange feathers on the wing and tail, this is retained until the fourth year, when they develop dark-grey upper coats and a pale-grey throat, breast and belly and sometimes a pale-grey collar.

The *Kākerōri* has several chattering, raucous calls, the most common is the male “TCHEE-KAKEROR”, repeated two or three times. This call is used to let other birds know where he is and is the basis for the Māori name: *Kākerōri*. Another call is the male alarm call, “TZAK-TZAK-TZAK-KAKEROR-SCREEEE”. The first part being slow, the “KAKEROR” being short and explosive, while the “SCREEEE” is a strong, scolding hiss. The females are quieter and give various “TZAK-TZAK-TZAK” calls but are not known to give the “KAKEROR” call.

Maturity is reached after the first year and therefore can breed in all colour plumages. Breeding occurs from October through to February with most eggs laid before the end of November. Nests are constructed in the fork of a tree and made from hanging moss,

## Shampoo Ginger

*Zingiber zerumbet*

## Kōpī ‘Ehua

Polynesian Introduction



A common plant along shady trails, forming small dense stands of leafy green shoots. The inflorescence is an egg-shaped cluster of bracts turning shiny red, while the white flowers emerge from between the bracts. The liquid squeezed from the inflorescence can be used as a shampoo. An infusion of grated roots is used to treat haemorrhoids or prolapsed rectum.

## Budding Tree-fern *Panga Tua-more*

*Cyathea decurrens*

Native



A native tree fern from New Ireland (PNG) to the Societies, and on Rarotonga only within the Cook Islands. This Tree-fern has a relatively narrow trunk with smooth leaf frond mid-ribs to about 3m in length. Large, shiny-brown scales are present at the base of the leaf frond. Branches that form from the trunk can develop roots and are called ‘Pups’, this is an unusual trait for tree ferns. The ‘more’ in the Maori name refers to the smooth underside of the frond midrib.

## Red Mistletoe

*Decaisnina forsteriana*



A small parasitic native shrub found growing on a host plant. The leaves are deep green, oval-shaped and grow opposite each other on the stem. The roots have suckers which enter the host to extract nutrition. The flowers are tubular and form along a stem, they start off greenish-yellow and turn a crimson-scarlet. The small, oval, ribbed fruit are eaten by Rarotonga Starling (*Tōi*), dispersing them to trees upon which it feeds or rests, especially on ridges.

## Pauma

Native

## Giant Taro

*Alocasia macrorrhizos*



Introduced by the Early Polynesians as a food crop. Though edible, if not cooked properly, the plant can be very poisonous to eat. The massive, heart-shaped leaves are attached to the equally massive corm. The juice can be used to promote the healing of wounds. This very large herb has a thick corm that can be seen above the ground.

## Kape

Polynesian Introduction

the outside is covered with spider egg sacs and the inside is lined with coarse vegetation and hold 1-2 cream mottled eggs. Cook Islands Homalium (*Mato*) is the preferred nesting tree, especially those over running water.

## The Kākerōri Story

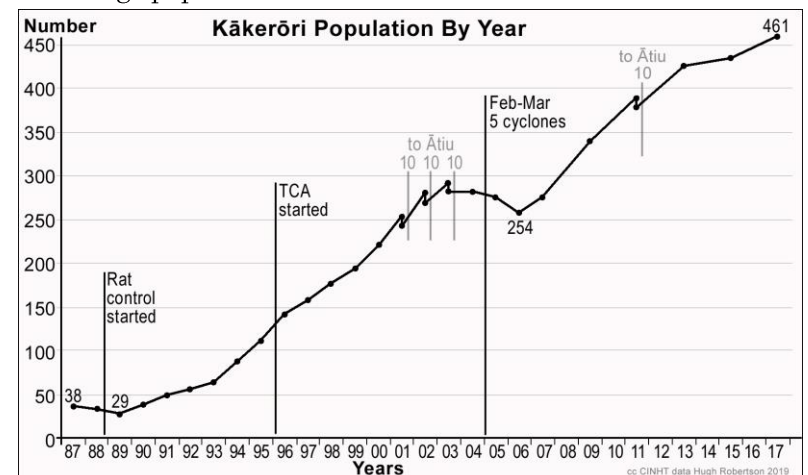
First collected in 1869 by American naturalist, Andrew Garrett, *Kākerōri* were recorded as common on the lowlands. By 1885, the Reverend William Wyatt Gill recorded that the bird had become rare and restricted to remote parts of the inland forest.

Two birds were collected in 1901 for the British and Bishop Museum, following that *Kākerōri* were not seen again until 1973 after extensive searches revealed two birds and three heard. Ten years later. British ornithologist David Todd discovered 20 birds with 2 nesting pairs.

From these survey results, a dedicated programme was established to bring the *Kākerōri* back from the brink of extinction. In 1989, with a critically endangered remaining population of 29 birds, rat poison and tree bands were established in the *Kākerōri* remaining habitat. These efforts saw a marked improvement of 78% to *Kākerōri* nesting success and an increase in the *Kākerōri* population.

The programme was handed over to the landowners in 1996 and the TCA was established and continues today. The *Kākerōri* population has continued to grow and is now no longer considered critically endangered.

A second population of *Kākerōri* was established on the Ship Rat-free island of Ātiu with some success. This population was created to ensure the continuation of *Kākerōri* should a disaster affect the Rarotonga population.



## Rarotonga Starling

*Aplonis cinerascens*

‘Īoi

Endemic



A medium-sized, charcoal coloured bird with pale yellow eyes and black feathers around the eyes and towards the base of the beak. Considered to be the most melodious of the Cook Island forest birds, its song is often a repeated “*II-oi*” call, which is the basis for its Rarotongan name.

Rarotonga Starling (‘Īoi) are more often heard than seen but in the evening and morning, you can spot the Starling darting over the mountain ridges or on low swift flights across small valleys either alone or in pairs as they forage in the canopy.

Preferring undisturbed montane forest but can be found along the forest edge, especially in the northern and eastern forests of Rarotonga at elevations between 150-600m, although occasionally found on the lowland where they were probably once common.

Rarotonga Starling are generalized feeders, eating fruit, insects and nectar, including that of the endemic Rarotonga Fitchia (*Neinei*). The Fitchia flowers are always downward facing, as opposed to facing the sun, and bent back towards the branch on which they grow and upon which the Starling can stand to pollinate it. Rarotonga Starling also eats the fruit of the Red Mistletoe (*Pauma*) and is responsible for its spread across the island.

Nesting is from Aug-Dec where Starling pairs line a high tree hole with leaves and plant fibre where more than one egg is laid. The Starling use the same nest in successive years and are territorial over nesting areas. Nests have been found in native trees such as Cook Islands Homalium (*Mato*), Bischofia (*Koka*) and Mountain Lantern-tree (*Turina*).

Rarotonga Starling live for around four years, the threats to the species are not fully understood and further research is required to

## Kava Shrub

*Piper methysticum*

*Kava Māori*

Polynesian Introduction



Introduced by the Early Polynesians, this sterile plant is known only from cultivation in the Cook Islands. The roots of this plant are used for the *Kava* drink of Pacific culture, a milky-coffee coloured tonic with a peppery taste which induces a euphoric, sometimes numbing state in the drinker. The alternate leaves are a dull green and heart-shaped. The greenish-white fruiting spike is attached opposite the leaves and is downwards pointing. A potion made with Kava and crushed Pacific Rosewood (*Miro*) or Indian Mulberry (*Nono*) fruit is used to treat urinary tract infections.

## Night-blooming Cestrum

*Cestrum nocturnum*

## Tiare Ariki-va'ine

Recent Introduction



A serious introduced invader of our forests, with pale leaves and stems, small yellowish-green, tubular flowers that open at night and release a sweet scent. The poisonous fruit is a large white berry (6-10cm across) that is dispersed by birds and water, this shrub is common in the moist forest understorey.



## Cordyline

*Cordyline fruticosa*

**Ti**

**Polynesian Introduction**



traditional

ornamental

ornamental

An important cultural plant brought to the Cook Islands by the Early Polynesians. A sparsely branching shrub with large, dark green, oblong leaves arranged spirally around the end of a bare stem. The flowers form on a very long compound spike and can be purple, pink or white. The traditional form is sterile while the modern ornamental forms develop fruits. Cordyline (*Ti*) is used in traditional ceremony and dance and the cooked roots produce a sweet pithy meal. The whole leaf is used to treat sore throat and an infusion of young leaves mixed with Castor Oil as a digestive purge.

## Pacific Mussaenda

*Mussaenda raiateensis*

**Kōtuku**

**Native**



A small native shrub, with a dark-brown stem and hairy young leaves. The mature opposite leaves range from elliptical to broadly-oval with pointed tips. The yellow star-shaped flowers are clustered at the tips of branches and each is accompanied by a few large white leaf-like bracts.

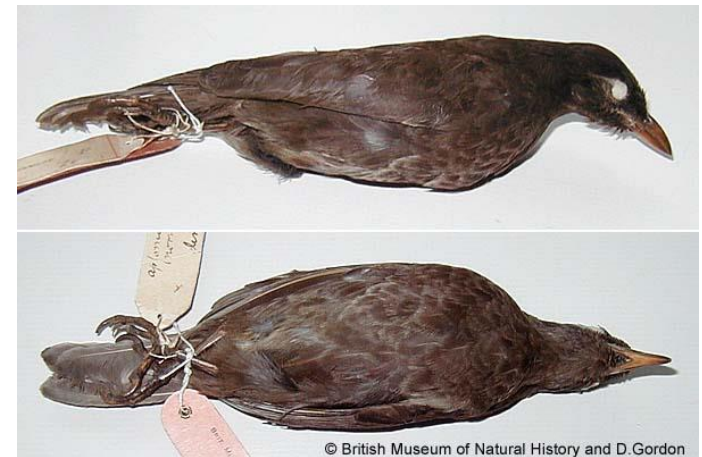
ensure better management of the bird. The Common Myna (*Manu Kavamani*) may have played a role in shifting the Starling out of lowland habitats where they once resided in the past. Common Myna have not established breeding territories in the montane forests of Rarotonga and are not thought to be having an impact on the Starling at present. Introduced rats may also be having an impact on nesting success and further research is needed to confirm this.

Rarotonga Starling is on the IUCN Red List as Vulnerable to extinction and had a population of about 2,300 individuals when surveyed in 2011.

### **The Mysterious Starling of Ma'uke**

The Mysterious Starling (*Aplonis mavornata*), or previously known locally as *Kikoi*, is the closest geographical relative of the Rarotonga Starling. It is known only from a single specimen collected on the island of Ma'uke in 1825. It has not been officially recorded since then and despite anecdotal reports, it was not found in 2011 in a search contest organized by the Cook Islands Natural Heritage Trust. It is now considered extinct.

Similar in appearance to the Rarotonga Starling but slightly smaller in size and dusty brown in colour.



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**Cook Islands Fruit-dove**  
*Ptilinopus rarotongensis*

**Kūkupa**  
Endemic



The Cook Islands Fruit-dove (*Kūkupa*) is a medium size, plump, bird with a bright magenta crown, pale grey head, neck and breast, the belly is yellow with a magenta patch. The back and wings are green, and the flight feathers have yellow edges while the tail is green with a white band across the tip. The iris is red-orange. The Ātiu population is similar in appearance without the magenta on the belly.

The typical call is a haunting “OO-OO-ooo-ooo-oo”. The typical Ātiu call has the second -OO- is higher than the first giving a “oo-OO-aaah”, which is the basis of its Maori name. Rarotonga birds sometimes give the "oo-OO-aaah" call.

Fruit-doves are commonly seen and heard in hillside and upland forest on Rarotonga while in Ātiu it is found in a wider range of wooded habitats, including on plantation edges and Makatea forest.

The Fruit-dove feeds on the small fruit of the Pacific Banyan (*Ava*), Polynesian Elaeocarpus (*Karaka*) and Pipturus (*Orongā*) amongst other species of fruit tree.

The nesting behaviour was observed in September 1997 from a chance nesting near a residential home in Avatiu, Rarotonga. Through local citizen researcher observations, we were able to learn that the nest is a loose platform of twigs in which a single unmarked egg is laid. Incubation is shared by the mates and green crop milk from both parents is possible food source for the nestling. The local researchers also noted that flight feathers developed after 2 weeks from hatching, first flight occurred towards the end of two weeks and fledging occurred around 30 days.

**Cecropia**  
*Cecropia pachystachya*

**Rau-māniota**  
Recent Introduction



A serious invader of the forest, this large tree has a pale grey trunk and palmate leaves, typically with 7 lobes and around 30cm in diameter. The branches have a hollow centre consisting of calcified cylinders, these hollow stems also give rise to its other common name, the Trumpet Tree. The fruit is commonly eaten by the native Pacific Pigeon (*Rupe*).

**Red Hibiscus**  
*Hibiscus rosa-sinensis*

**Kaute 'Eua**  
Polynesian Introduction



A medium height branching shrub with dark green, oval, alternate, serrated leaves and a solitary bright red to scarlet-crimson bloom. The above bloom was introduced by the Early Polynesians. It was planted to demarcate boundaries or places of interest in the mountains. Red Hibiscus is used in a variety of traditional herbal medicines.

**Cook Islands Pittosporum**  
*Pittosporum rarotongense*

**Kavakava**  
Endemic



Only on Rarotonga, Mangaia, Miti'āro and Ma'uke. This endemic tree has a pale grey trunk and the leaves are aromatic crushed. The long-oval-shaped leaves are a deep glossy green with ruffling along the edges. The sweetly scented yellow flowers form on a stalk and produce medium-sized yellow to orange, wide-oval fruit that split cleanly in half when ripe to reveal many sticky black seeds.

**Strawberry Guava**  
*Psidium cattleianum*

**Tūava Papa'ā**  
Recently Introduced



A serious invader of our forests, this small tree with smooth, light brown bark and simple, opposite, shiny dark green, oval-shaped leaves is common in the middle part of the TCA. The oval purplish-red fruit with white flesh is sweet and readily dispersed by people, pigs and birds. Strawberry Guava acts as an invasive species by forming dense thickets which crowd out other plants.

**Pacific Pigeon**  
*Ducula pacifica*

**Rupe**  
Native



The Pacific Pigeon is found on relatively small islands from near Papua New Guinea eastward to the Cook Islands. It is mostly grey with deep green wings, back and upper tail. The tail is blunt and the black cere, above the beak is enlarged. Males and females are similar in appearance, while immature birds are duller in colour and do not possess the enlarged cere.

Pacific Pigeon have two distinct call, a short rolling "rrrrrhhhh" growl and a haunting "mooo", both are commonly heard in the forest.

They typically nest in tall trees, laying a single egg in a concealed, untidy nest of twigs with incubation undertaken by both mates.

A fruit eating bird, the Pigeon is responsible for spreading the seeds of many trees, including Fagraea (*Pua*), Ylang-ylang (*Mata'oi*), several types of Ficus and the invasive Cecropia (*Raumaniota*).

Capable of interisland flight, Pacific Pigeon are on Rarotonga, Ātiu, Ma'uke, Miti'āro, Palmerston, Manihiki and Pukapuka. On large islands, it is commonly found in tropical moist forest and on smaller islands and islets it resides in lowland or coastal forest.

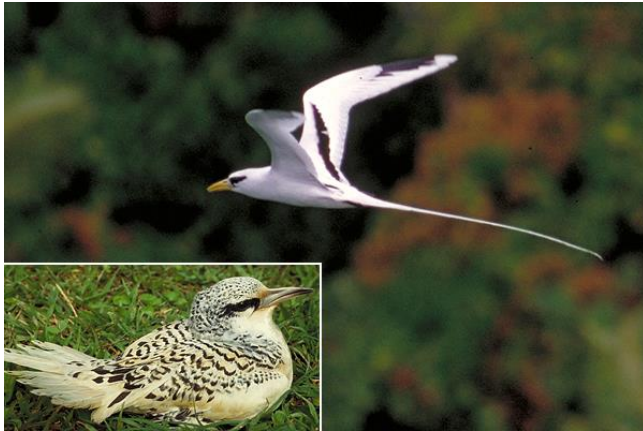
Common across the inland of Rarotonga, the Pigeon has recently become abundant in lowland residential areas. The archaeological record shows that Pacific Pigeon were present on Aitutaki and Mangaia in pre-historic times.

## White-tailed Tropicbird

*Phaethon lepturus*

## Rākoa

Native



A large white bird with black marks on the topside of its wing and around the eyes, a yellow beak and a conspicuous long white tail streamer (~30cm). Its call is a chattering screech and typically given in flight, especially when they group above breeding grounds in wheeling, frolicking, courtship flight.

## White Tern

*Gygis alba*

## Kākāia

Native



The White Tern has pure white plumage and black eyes, a long black pointed beak and black feet, with a wingspan of around 80cm. Usually seen flying in pairs or small groups as they inspect trees for nest sites. These Terns feed at sea but due to a lack of waterproofing oil, they skim the water surface picking up small fish rather than diving into the water. This lack of oil is also seen in Frigatebirds (*Kōta'a*) and Sooty Terns (*Tara*). They lay a single egg in a small hollow on a tree branch without nest material. The White Tern is also commonly known as the Fairy Tern.

## Rarotonga Fitchia

*Fitchia speciosa*

## Neinei

Endemic



Only found on Rarotonga, this endemic tree is one of the most common understorey plants found in the forest. The shiny green leaves are thin with wavy margins and clustered towards the ends of branches. The large flower has bright orange spikes and it bends back towards the branch, allowing for purchase for its pollinator, the endemic Rarotonga Starling (*Tōi*). The prop roots are distinctive and set Fitchia apart from other forest trees.

## Rarotonga Meryta

*Meryta pauciflora*

## Kaka Vatua

Endemic



Only in the Cook Islands, this endemic uncommon understorey plant is usually seen as single stout trunk with a cluster of long spatula-like dark shiny leaves with pale mid-rib. The inflorescence forms in the centre of the leaf cluster as a yellow to cream fleshy cauliflower-like head of male and female flowers.

## Rubber Tree

*Ficus elastica*



A very large tree with a stout trunk and a sprawling canopy. Buttress and aerial roots help to anchor the plant in the ground and support the heavy branches. The leaves are large, broadly oval and shiny green on top and paler underneath. All parts of the tree contain a milky white latex-like sap that was formerly used to make rubber. The sap can be an irritant and toxic if taken internally.

## Albizia

*Falcataria moluccana*



A serious invader of agricultural and disturbed land, with massive trunks and a sprawling, layered canopy. Albizia makes up most of the canopy in the lower part of the TCA and its trunk and branches are often covered with the small *Pyrrosia* Felt Fern. The tree was introduced from Fiji in 1937 as a source of timber for crate construction to support early fruit and vegetable exports

## Rapa

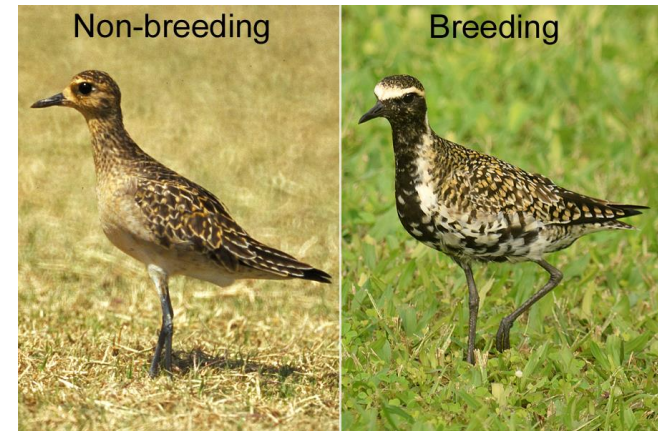
Recent Introduction

## Pacific Golden Plover

*Pluvialis fulva*

## Tōrea

Native Migrant



A migratory bird that breeds in Alaska and over-winters in the Cook Islands (Sep-Apr). Plovers arrive in breeding plumage and by November have moulted into their drab-brown non-breeding plumage. Plovers occupy grassy fields where they feed on insects and other invertebrates. They are quiet on the ground and give a repeated “*tuuu-ree*” alarm call when they take flight.

## Long-tailed Cuckoo

*Urodynamis taitensis*

## Karavia

Native Migrant



The only natural predator of the *Kākerōri*, this large migrant breeds in New Zealand and over-winters in the Cook Islands (Jan - Sep). Cuckoos have a distinctively long tail and slender body. The upper side of the back and tail is dark brown with tan barring and white marks interspersed. The underside is pale with black streaks. Its call is usually a high pitched “*wrrrrissSST*”, notably before rain, making it an omen bird. It also gives a rattling “*Chi-chi-chi*” when interacting with other Cuckoos.

## Eastern Rosella

*Platycercus eximius*

Recent Introduction



An Australian native introduced to the Cook Islands in 1988 and escaped captivity around 1990. This large brightly coloured parrot with white cheek patches and a red head and breast. The wings are green to yellow with some blue feathers. It has three distinct calls, 'tink-tink', 'pseet-it' and 'tock-swit-it'. A feral population lives around the TCA area and have been seen flying inland to roost.

## Common Myna

*Acridotheres tristis*

## Manu Kavamani

Recently Introduced



Introduced privately in 1906, and immediately protected by the Administration as a controller of insect pest. Its breeding territories cover the lowlands and it aggressively excludes native birds. A medium-sized bird with a dark brown body and black head, throat and neck, with white patches on its wings and tail. Recently, the closely related Jungle Myna (*A. fuscus*) has established itself on Rarotonga, distinguished by its sooty-grey colour, smaller size and not having the yellow patch of skin behind the eye.

## Tree Hibiscus

*Hibiscus tiliaceus*

'Au

Polynesian Introduction



A sprawling tree which forms dense thickets, its large heart-shaped leaves are dull green above and pale-grey below. The lemon-yellow flowers are large with a dark purple centre and turn reddish-orange. The prepared bark is used to make dance skirts used in Polynesian dance, light rope and weaving fibre. The wood is light, easily worked and used for the outrigger on canoes. The crushed flowers are used to treat cuts and boils. An infusion of Tree Hibiscus and Coconut bark is used to bathe fractures.

## African Tulip Tree

*Spathodea campanulata*

Kō'ī'ī

Recent Introduction



A serious invader of the forest, this large evergreen tree has showy orange flowers and egg-shaped compound leaves with ladder-like leaflets. The fruit is oblong capsule containing many winged seeds, that are spread by wind across the island. The bright flowers are conspicuous against the mountainous backdrop of Rarotonga. African Tulip-tree is being subjected to biocontrol to reduce its spread in the Rarotonga forests.

## Polynesian Chestnut

*Incarpus fagifer*

I'i

Polynesian Introduction



A very large tree with fluted buttresses, up to several metres high, at its base. Leaves are simple, alternate and glossy green. The green to brown fruit is irregularly wide-oval and laterally compressed with a fleshy kernel that is consumed locally. This tree is typically found along waterways. An infusion made from the bark and leaves is given to children with teething problems.

## Bischofia

*Bischofia javanica*

Koka

Polynesian Introduction



A medium-size tree with flaky pinkish-brown bark. Leaves are broadly oval, slightly toothed and form in sets of three on a long leaf-stem. Male and female trees are separate with inconspicuous flowers. The fruit is a small brown berry. The sap from the scraped bark is used to dye *Tapa* cloth.

## Blue-moon Butterfly

*Hypolimnas bolina*

Pepe Tako

Native



A common native butterfly where males and females are not similar in appearance. The male (~8cm wingspan) is black with a white spot on each wing, the spots are surrounded by an iridescent blue ring when seen from certain angles. The larger female (~9cm) is variable in colour and typically always has an orange blotch on its forewings. The caterpillar is black with tan markings and spines along its back. Males are territorial and often seen along inland roads.

## Red Postman Butterfly

*Heliconius erato*

Recent Introduction



Introduced in 2016 from Ecuador as a biocontrol for the invasive Red Passion Vine (*Passiflora rubra*), this butterfly has become very common and seen in all habitats where the Red Passion Vine occurs. The caterpillar of the butterfly feeds on the young growing tips of the vine.

**Pacific Fruit-bat**  
*Pteropus tonganus*



A flying mammal with a native range from islands near Papua New Guinea eastward to Mangaia; introduced to Rarotonga around 1880. Pacific Fruit-bat have black fur with a contrasting yellow-orange mantle. The wingspan is between 120-160mm and weigh around 500g. A fruit-eating bat, they nest communally in the bare upper branches of tall trees during the day and feed at night. Fruit-bats are subjected to hunting pressure in the Cook Islands.

**Moā Kirikiri**  
Native

**Polynesian Mahogany**  
*Calophyllum inophyllum*

**Tamanu**  
Native



A handsome tree with a massive trunk, the leaves are broadly oval, opposite and a deep glossy green with small white fragrant flowers that form at the ends of stems. The sap is a sticky yellow substance. An important timber plant across Polynesia and a valued carving material. The leaves and oil are used medicinally, crushed leaves are used to treat sores and rashes and the oil is used in massage therapy.

**Cook Islands Homalium**  
*Homalium acuminatum*

**Mato**  
Endemic



Found only on Rarotonga and Mangaia, this endemic tree is the dominant forest tree in most valleys on Rarotonga. A small to large tree with light grey bark, with smooth horizontal ridges. The leaves are small, broadly oval with pointed tips. The tree typically grows with several 'trunks' sprouting from the base. *Homalium* has mass flowering episodes which are triggered by cyclonic storms or hurricanes.

**Fagraea**  
*Fagraea berteriana*

**Pua**  
Native



A medium-sized tree with thick leathery green leaves arranged around the tips of branches. The trumpet-like flowers are white and quickly turn yellow over the course of the day and produce a large orange oval-shaped fruit. The flowers were commonly used for flower garlands in the past. *Fagraea* can be epiphytic (growing on other plants or rocks) or a strangler, eventually killing the plant it grows on. Fungal infections can result in stem cankers.