

Responses of Plants and Animals to their external Environment on Tiritiri Matangi Island

New Zealand NCEA Achievement Standard 91603, Bio 3.3 Ext Ass

A. Why Tiritiri is a successful wildlife sanctuary?



Summary of Island Events:

- Revegetation of Tiritiri 1984 1994 = habitat improved
- kiore eradication in 1993 = mammalian pest free status achieved
- > 24 year OSNZ (1987-2010) regular terrestrial bird monitoring

Response to improved habitat and no mammalian pests:

- ➢ increase in
- birdlife and sound

kererū/kūkupa- NZ pigeon numbers increased

kōtare- NZ kingfisher increased

B. Daily Rhythms on Tiritiri Day Active Forest Animals – diurnal

Find the following in the diagram: tūī, kōkako, toutouwai - Nth. Is. robin, kererū/kūkupa - NZ pigeon, hihi – stitchbird, tīeke – saddleback, kohekohe flowers – possum feed on the flowers on the mainland.





Night Active Forest Animals – nocturnal

Find the following in the diagram: ruru – morepork, pūriri moth, kiwi pukupuku, kororā – little penguin, tuatara, Duvaucel's gecko, tree wētā, huhu beetle, giant centipede.



Ruru/morepork

- Silent flight
- Roosts during the day can be observed

Responses:

- nocturnal
- three distinct calls at night has a number of calls
- top predator feeds on insects and small birds

Responses to ruru from korimako – bellbirds and other bush birds during daytime: ➤ Loud harsh continuous calls

> In flocks korimako/bush birds will mob ruru giving out constant alarm calls



C. Fauna Responses Pohutukawa

Responses:

- fine seeds lodged in cracks and fissures of rock
- Iong living two trees on Tiritiri 800 yrs old
- roots spread widely over rock faces for anchorage and nourishment
- shape of canopy copes with storms
- leaves tough, leathery and hairy underneath resists
- nectar in flowers attracts many pollinators tūī, hihi, korimako.
- nocturnal feeders such as ______ and bats feed on nectar.
 (Note: bats are not on Tiritiri at present)

D. Migration - movement from one geographic location to another.

Examples:

- Pīpīwharauroa- shining cuckoo nesting in riroriro-grey warbler nests



http://www.search.ask.com/web?q=The+migration+route+of+long+tailed+cuckoo

Examples of *interspecific relationships and brood parasitism* - *an animal such as cuckoo uses a member of another species to feed its young, each of which is considerably larger than its foster parent.*

Seabirds that migrate. Four sea-birds found on or near Tiritiri that migrate either to Australian waters or up to tropical Pacific waters after the breeding season.

- Cook's petrel
- White-faced storm petrel Jesus birds
- Fluttering shearwater
- Grey-faced petrel



Tiritiri Matangi Education: B Hughes.

E. Homing - ability to return to its 'home' - territory over unfamiliar territory. Miromiro, North Island tomtit: after being translocated to Tiritiri in 2004 with 31 other tomtits, "Mr RG" (a 10 gm bird) flew over 56 km back to home territory in the Hunua Ranges.

Response: miromiro/tomtit known to disperse widely and have a strong homing instinct.



Korimako – bellbirds have a similar response when translocated. There has been no successful translocation of bellbirds to date.

F. Interspecific relationship - Co evolution - two species

influence each other's evolution eg the following two examples.



The **kererū** and kōkako are vital to the distribution of seeds from large berries, especially **karaka**, **tawa**, **taraire**, **tawapou**. The seeds germinate better once their fruit coat has been digested by a kererū or kōkako and it passes out ready-coated in fertiliser! Without these two birds some of our forest giants would eventually disappear.



Flowering trees and nectar feeders- tūī, korimako- bellbirds and hihi- stitchbirds are some of the most important flower pollinators of native trees such as kōwhai, rewarewa, pūriri, harakeke (flax).









Take away messages to set-up a 'Tiritiri sanctuary' in your own backyard:

- Covid has shown humans MUST respect & work in with nature
- Change our behaviour no plastics/rubbish in our seas
- Volunteer to look after native areas near your homes
- Invader Free NZ eliminate pests, weeds and any invaders

