Ngaro huruhuru
NZ NATIVE BEES

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March 2023

NGA MIHI

Kei te mihi ki a koutou,
kua tau mai nei.
Tēnā koutou, tēnā koutou,
tēnā koutou katoa.

“E hoa mā,
kia āta poipoi i tā tātou
Ngaro huruhuru”

My Friends,
let's carefully nurture our
native bees.

BACKGROUND

Bee tracking project (PGDip)	**2003**
Basic bee-data lacking	**2004**
Monitoring started (Mt. Parihaka)	**2005**
Natural history Whangarei (MsC)	**2008**
Digital images (PhD)	**2016**
Monitoring	**2017**
Nesting	**2022 - 2023**

NZ
BEES

NZ BEES

~ 40 different types of bees in NZ
~ 14 have been introduced

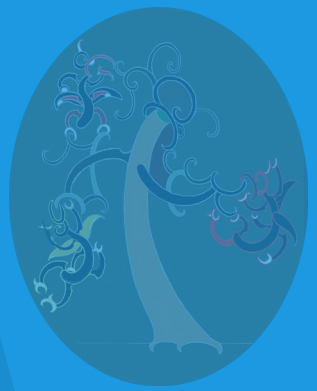
Imported
Honey bees 1839 (1 species)
Bumble bees 1846 (4 species)
Alkali bee 1966
Leaf cutter bee 1971
Red clover mason bee 1995

Arrived accidentally
Wool carder bee 2006

NZ BEES

- Around 27 **endemic** bees
- They found **only** in **NZ**
- Important **pollinators**
- **Native** ecosystems
- **Evolved** with plants
- Natural **heritage** of NZ

NGARO HURUHURU: FAMILIES



Of the endemic bees in NZ
almost half are **newly described**

They are from ancient bee families
called **Colletidae** & **Hallictidae**

- Microscope required to ID to specific species
- Look similar but have small differences
- Can easily classify into **3 broad groups**.

NGARO HURUHURU:
GROUPS

Hairy colletids

Solitary, ground nester’s, fluffy

Pollen on back legs

18 species

Masked bees

Solitary, wood nester’s, hairless

Pollen in crop

6 species

Sweat bees

Solitary, diggers, semi-social, fluffy

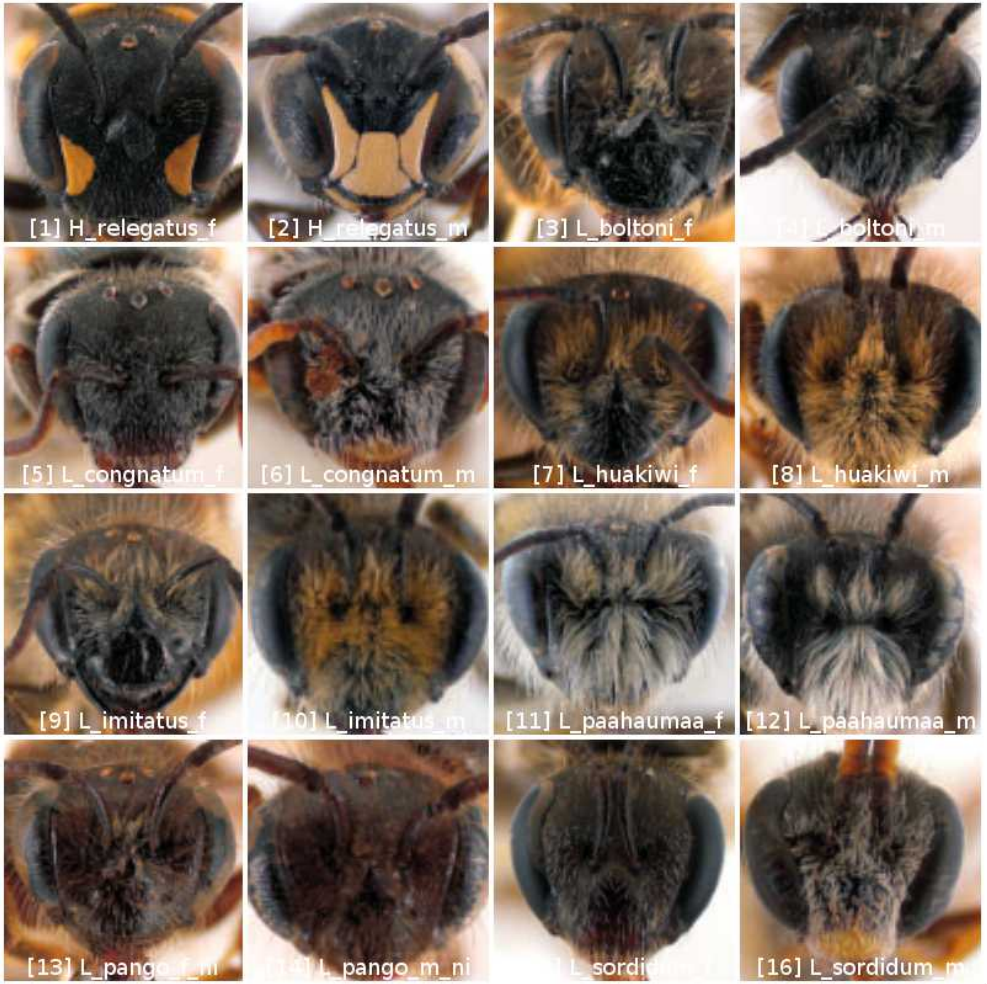
Pollen back legs & tummy

4 species

NGARO HURUHURU: WHANGAREI STUDY

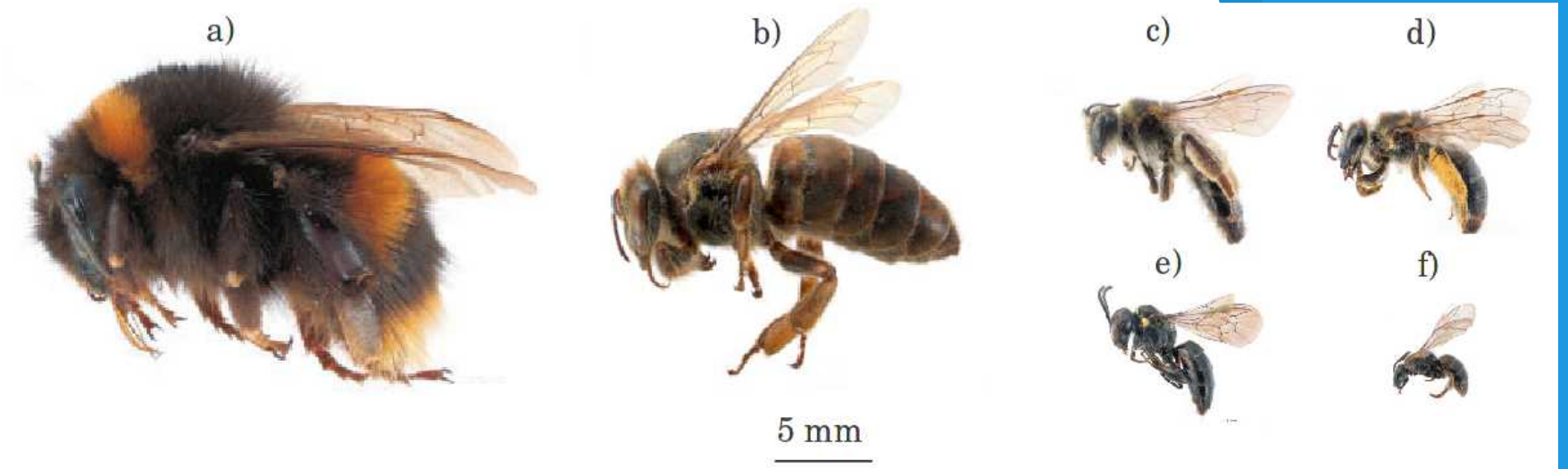
Mt. Parihaka 7 Species

- Prefer nesting with others
- Gregarious nesters
- Large aggregations
- Ongoing research into nesting
- Raising community awareness
- Kaitiakitanga



PHOTOS | Landcare Research Fauna of New Zealand 57: Apoidea (Insecta: Hymenoptera). Donovan, BJ 2007

NGARO HURUHURU:
Awareness ID



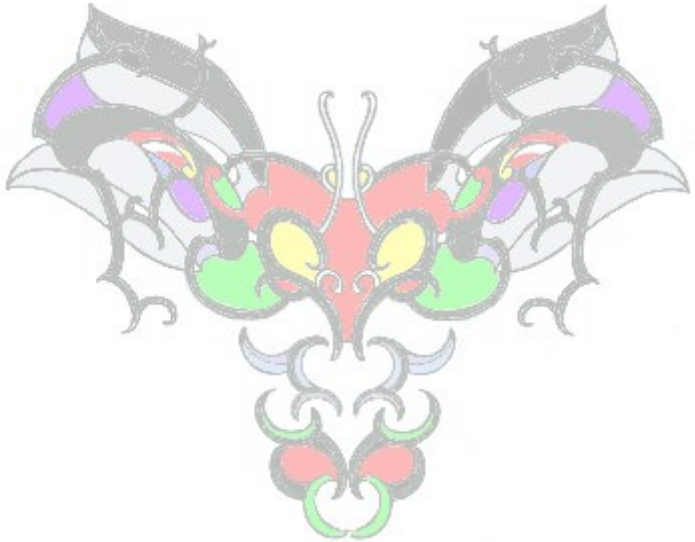
Bumble bee a) and honey bee b) sizes compared to native bees c)-f)

PHOTOS | Landcare Research Fauna of New Zealand 57: Apoidea (Insecta: Hymenoptera). Donovan, BJ 2007

THINGS TO CONSIDER

- What are the consequences of native pollinator losses?
- With little previous or current data…
- How can we be sure about the health of communities?
- **Who cares for native bees?**
- **Stewardship - knowledge**

PHOTO: C Beard, DOC 2015



Tradition tells of the time when Papatūānuku, was clothed in vegetation. After she was adorned, the Atua turned their attention towards the insects and reptiles of the earth.

There were some who viewed the insects as kutukutu; infesting the body of Papa and so the whatukura Ruatau and Rehua intervened.

They spoke gently of the creatures to Tāne the great God of the forests….and foretold.

Treat kindly the offspring of Torohua and Muhumuhu.
That they may serve as companions for you all.
While some are desirable, others are not.
But, they preceded all
other things.

Published research

Name	Organisation	Title literature & year	Link
Barry Donovan	Donovan Scientific Insect Research	B.J Donovan 2007 - Fauna of New Zealand 57: Apoidea (Insecta: Hymenoptera). **2007**	https://tinyurl.com/y3s37hcv
Catherine Beard	Department of Conservation	Honeybees (Apis mellifera) on public conservation lands: a risk analysis **2015**	https://www.researchgate.net/profile/Catherine_Beard
Linda Newstrom-Lloyd	Landcare Research Pollination Biologist	Pollination in New Zealand. In J. R. Dymond (Ed.), Ecosystem Services in New Zealand (pp. 408-431). **2013**	https://tinyurl.com/yx98oqs6
Ngaire Hart	Auckland University of Technology	Monitoring New Zealand's native bees: a collaborative approach using image analysis. **2016**	https://www.researchgate.net/profile/Ngaire_Hart2
Jamie Stavert	Doctor of Philosophy Thesis University of Auckland	Pollination in a changing world: function and resilience **2018**	https://researchspace.auckland.ac.nz/handle/2292/36916
Ana Kokerny	Master of Science Thesis University of Auckland	Nesting ecology and habitat requirements of New Zealand ground-nesting solitary bees **2016**	https://researchspace.auckland.ac.nz/handle/2292/32800
Jay Masao Iwasaki	Doctor of Philosophy Thesis University of Otago.	Interactions between bee species in relation to floral resources **2017**	https://ourarchive.otago.ac.nz/handle/10523/7487

Published research

Nikki Maria Hartley	Master of Science Thesis Massey University	Ecology of Native Bees in North Taranaki, New Zealand **2018**	https://nzresearch.org.nz/records/42143670
Rachel Nepia	Master of Science Thesis University of Waikato	Understanding the role and impact of honey bees in a submontane indigenous forest ecosystem *__2019__	https://www.researchgate.net/profile/Rachel_Nepia
Franziska Gabriela Schmidlin	Master of Science Thesis Lincoln University	Insect flower visitors in native plantings within the arable landscape of the Canterbury Plains **2018**	https://researcharchive.lincoln.ac.nz/handle/10182/10827
Della G. Bennet Dave Kelly and John Clemens	University of Canterbury	Food plants and foraging distances for the native bee Lasioglossum sordidum in Christchurch Botanic Gardens	https://newzealandecology.org/nzje/3316.pdf