

NZ native bees

Angels of the environment

Ngaire Hart
June 2016





Background

Miniature antennas (BE)

Bee tracking project (PGDip)

Basic bee-data lacking

Natural history Whangarei (MsC)

Digital images in 2010 (PhD)

Started monitoring 2005

Watching bees a family tradition

Talk outline

Bees of the World

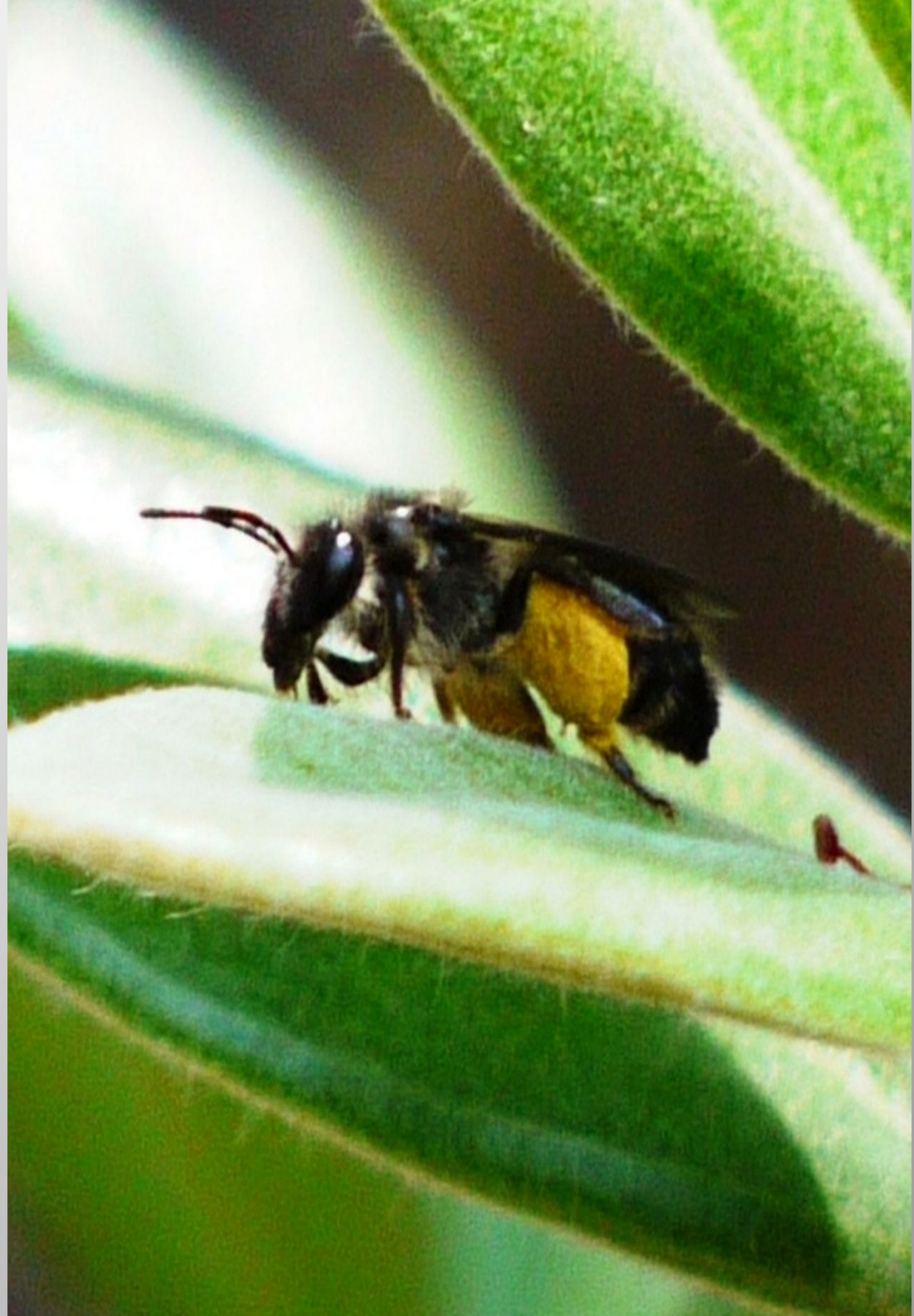
Ngaro Huruhuru

What we know...

What we need to know...

What you can do to help...

Discussions



Bees of the World & NZ



Wool carder bee, Town Basin, Whangarei, 2014

Around 40 species of bees in NZ
Around 14 have been introduced

***** Imported**

Honey bees – 1 species (1839)

Bumble bees – 4 species (~1914)

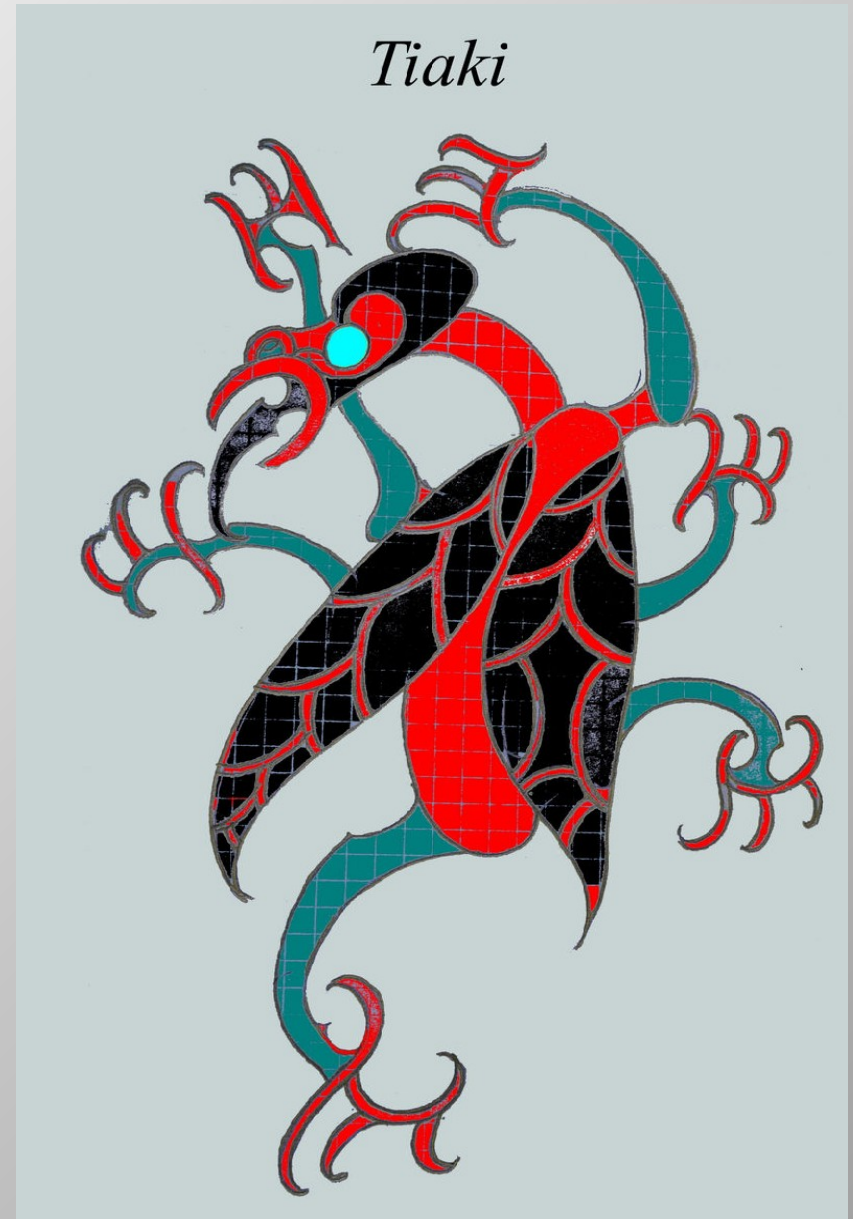
Leaf cutter bees – 3 species (~1970)

***** Some arrived accidentally**

Wool carder bee – noticed around 2006

Ngaro Huruheru: pollinators

- NZ has 26 *endemic* bees
- They are found *only* in NZ
- *Important pollinators*
- *Natural* ecosystems
- *Evolved* with NZ plants
- Natural *heritage* of NZ



Ngaro Huruhuru: families

Of the 26 endemic bees in NZ almost half are newly described

They are from ancient bee-families called Colletidae & Halictidae



- *Hairy colletids: solitary, diggers, pollen on back legs*
- *Masked bees: solitary, wood nesters, pollen in crop*
- *Sweat bees: semi-social, diggers, pollen on back legs*

Ngaro Huruhuru: life-cycle

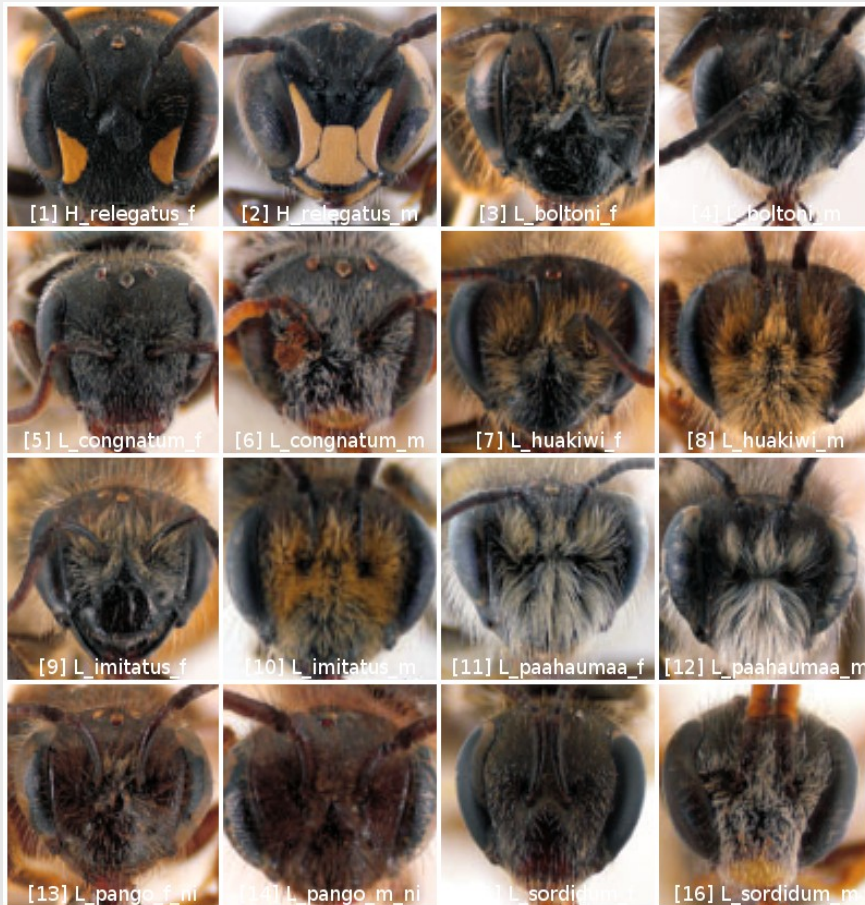


Spring-summer on the wing
Males first, then females
Males expire after mating

Females collect pollen & nectar
Start to construct nests
Blind *tunnels* in the ground
Place one egg on *bread ball*
Seal chamber and repeat

Females expire
Grubs overwinter

Ngaro Huru: Whangarei



Mt. Parihaka 7 species
Prefer nesting with others
Gregarious nesters
Aggregations

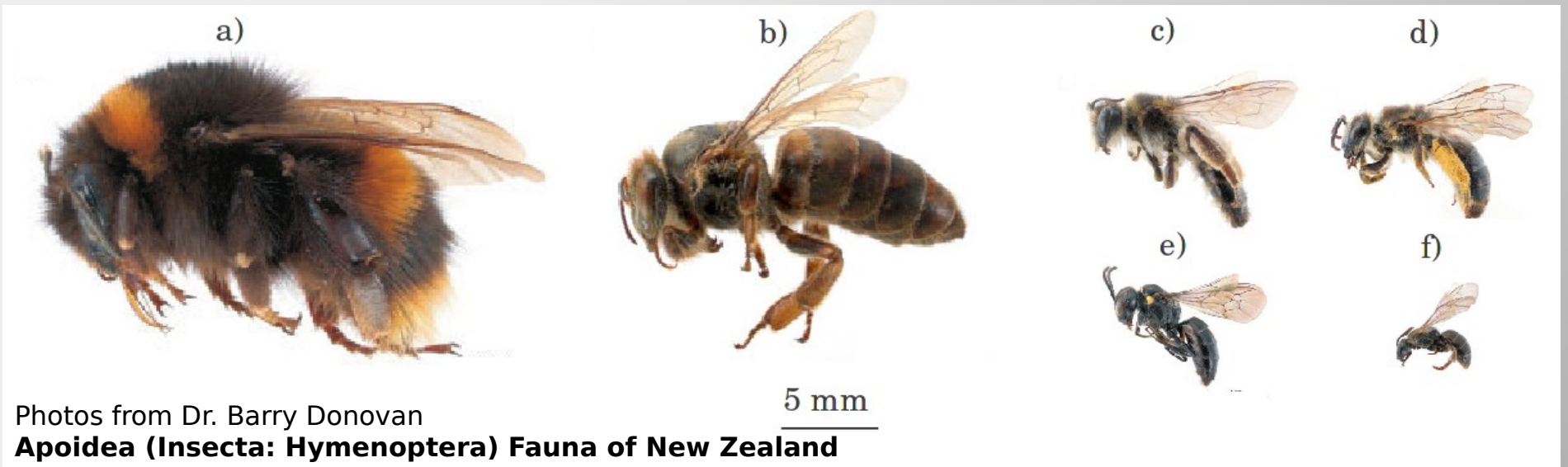
Foraging, in flight or by scope...
Difficult to ID by eye
Small and move fast
Species look the same

Photos from Dr. Barry Donovan

Apoidea (Insecta: Hymenoptera) Fauna of New Zealand

Ngaro Huruhuru: Whangarei

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



NZ native bees are:

Much smaller than imported species

Black or only slightly colored

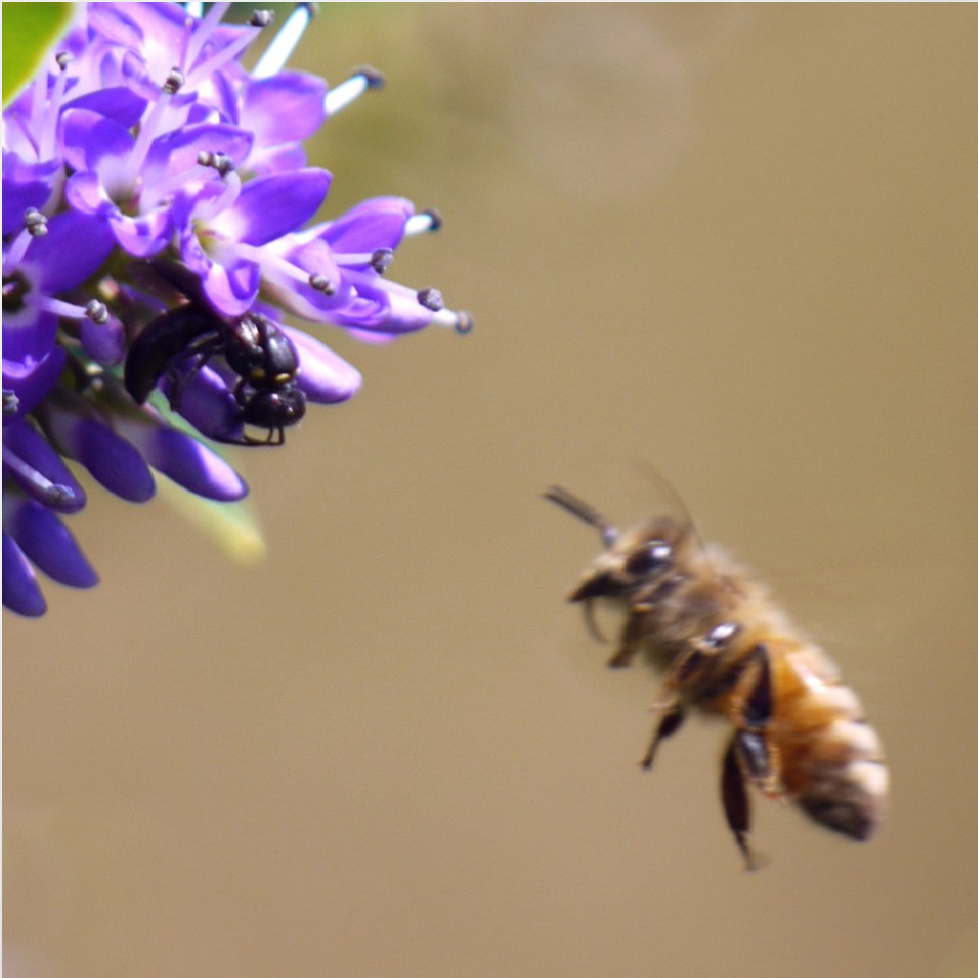
Some are hairy - others are not

Some look like wasps or flies

Gentle and do not normally sting

Move very fast

Things to consider...



What are the consequences of losses?

With little or no, previous data...

How can we be sure about the health of communities?

Who is cares for native bees?

What defines our cultural heritage?

NZ native masked bee and honey bee on koromiko

Things to consider...

Raising awareness is key – community stewardship

Can we monitor micro populations – backyard scientists?

Pesticide use – can we avoid around bee-emergence times?

GMO use – what are the consequences?

More bee foods – can we apply successive native plantings

Honey bees – are we over stocking in natural bush areas?

Honey bees – can we monitor before and after?



Resources...

Apoidea (Insecta: Hymenoptera) Fauna of New Zealand

https://www.landcareresearch.co.nz/__data/assets/.../FNZ57Apoidea.pdf

Trees for Bees

<https://www.treesforbeesnz.org>

NZ Bees

<https://www.facebook.com/NZBees/>



NZ native masked bee and honey bee

Discussions...



NZ native hairy colletid bee on ground nest area