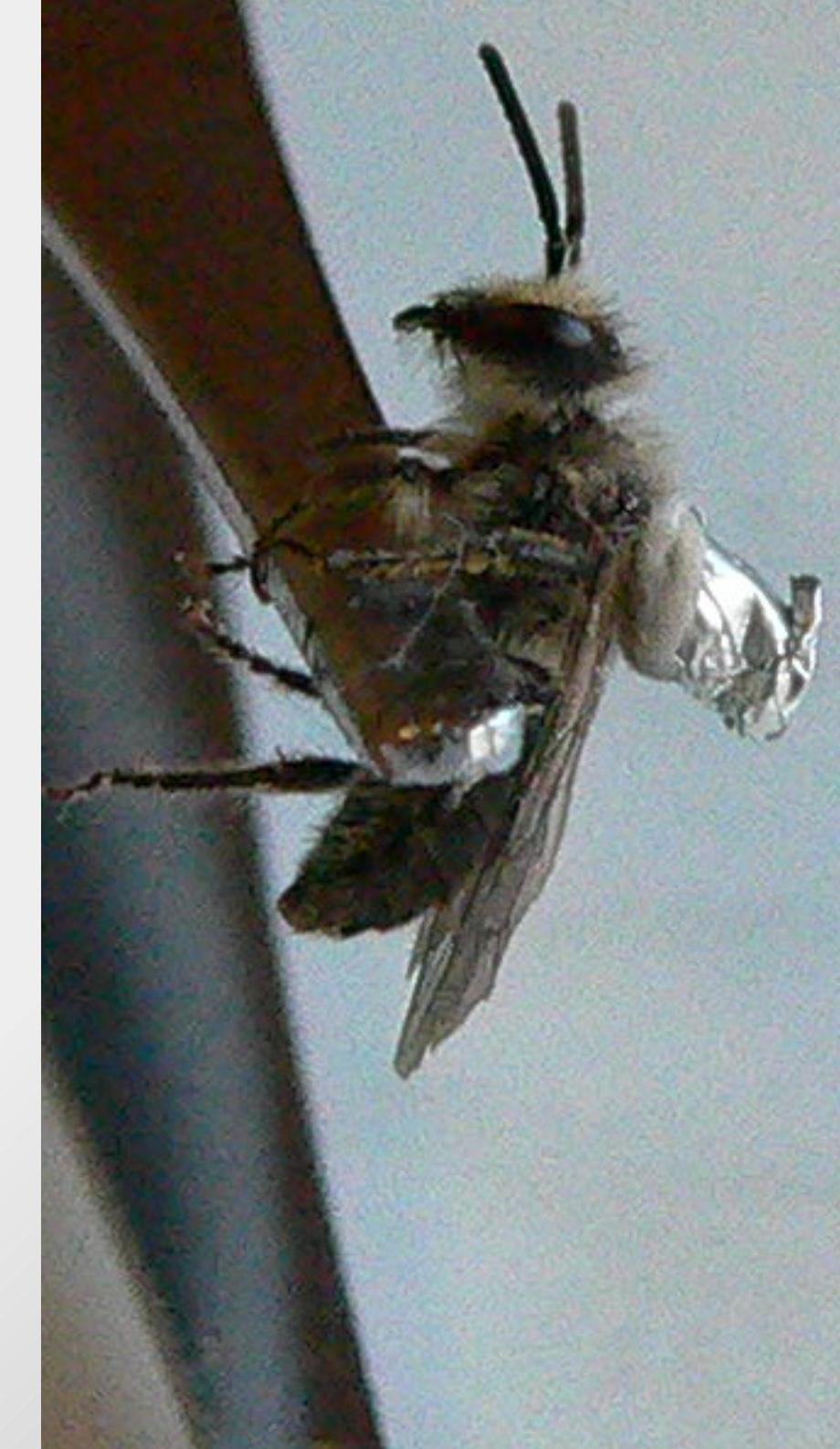


# NZ native bees

*Angels of the environment*

**Ngaire Hart  
November 2015  
McLeod Bay Hall**





# 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**

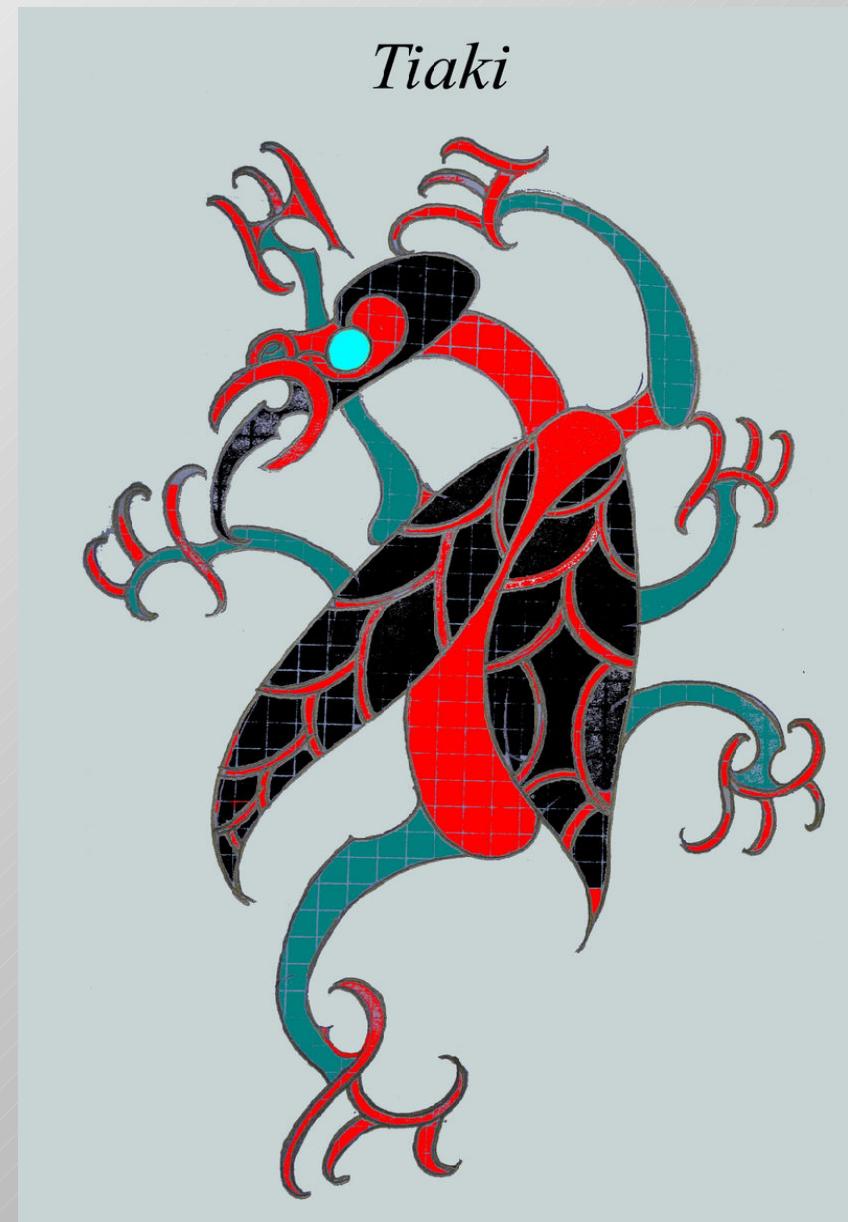
Honey bees – 1 species (1839)  
Bumble bees – 4 species (~1914)  
Leaf cutter bees – 3 species (~1970)

**\*\*\* Some arrived accidentally**

Wool carder bee – noticed around 2006

# Ngaro Huruhuru: 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 Huruhuru: 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

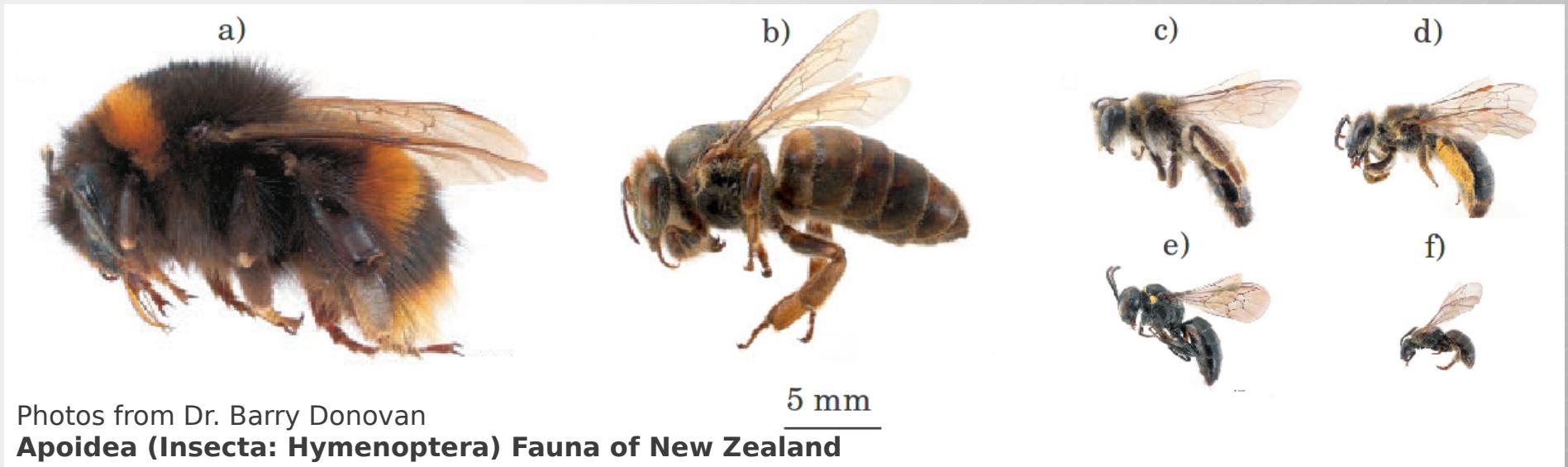
Species look the same

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:

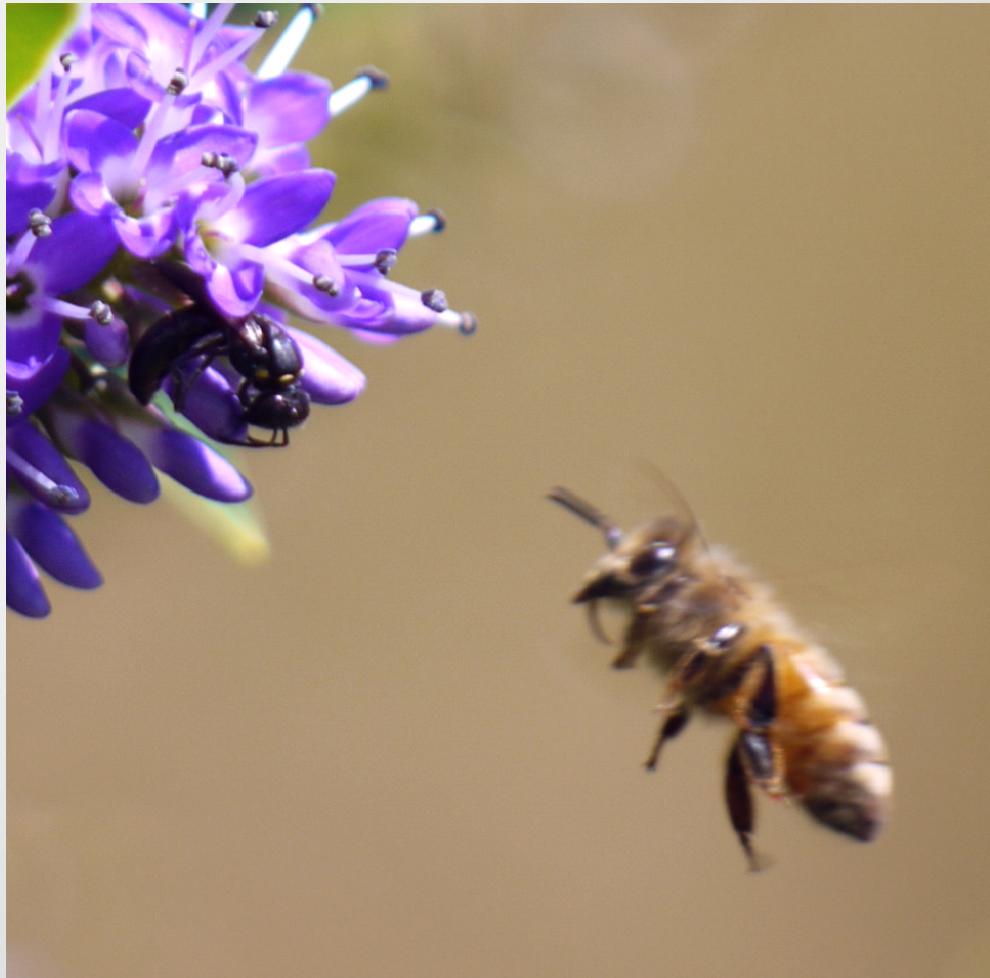
- Much smaller than imported species
- Black or only slightly colored
- Some are hairy - others are not
- Some look like wasps or flies
- Gentle and do not normally sting
- Move very fast

# Bee hunting

- Easy to spot nests
- Along road verges
- Clay banks, bare soil or in sand
- Tumulii accumulates in drains
- Nest sites - audible hum
- Normally close to food
- May be seen foraging close by?
- Don't sting – not aggressive
- Other organisms – tiger beetles
- Choose safe spots to look!



# 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?

*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?

More bee foods – can we apply successive native plantings

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

Honey bees - can we monitor habitats before and after?



# Resources...

**Apoidea (Insecta: Hymenoptera) Fauna of New Zealand**

[https://www.landcareresearch.co.nz/\\_\\_data/assets/.../FNZ57Apoidea.pdf](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*