



Restoration ecology of vascular epiphytes and vines

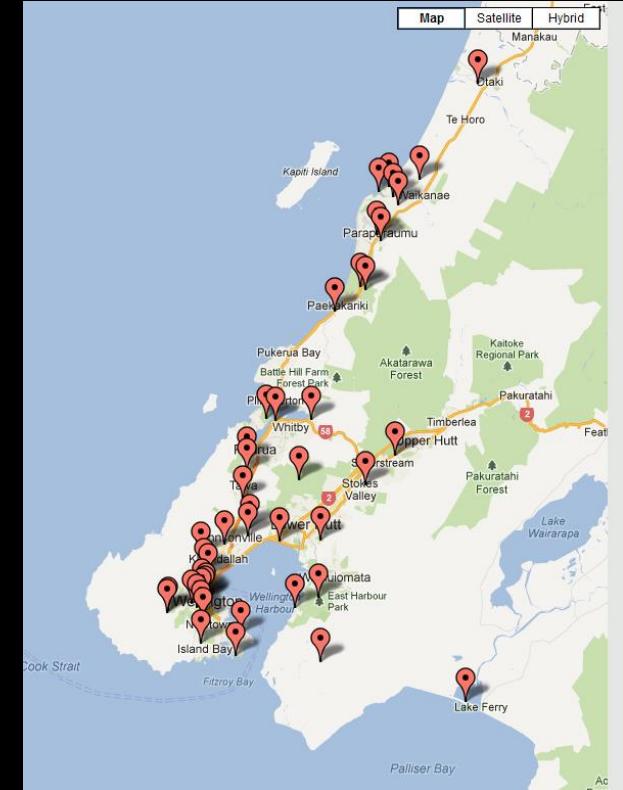
Catherine Bryan



My talk today:

- The problem
- Research findings
- Solutions so far

Ecological Restoration in New Zealand



We're very good at trees...



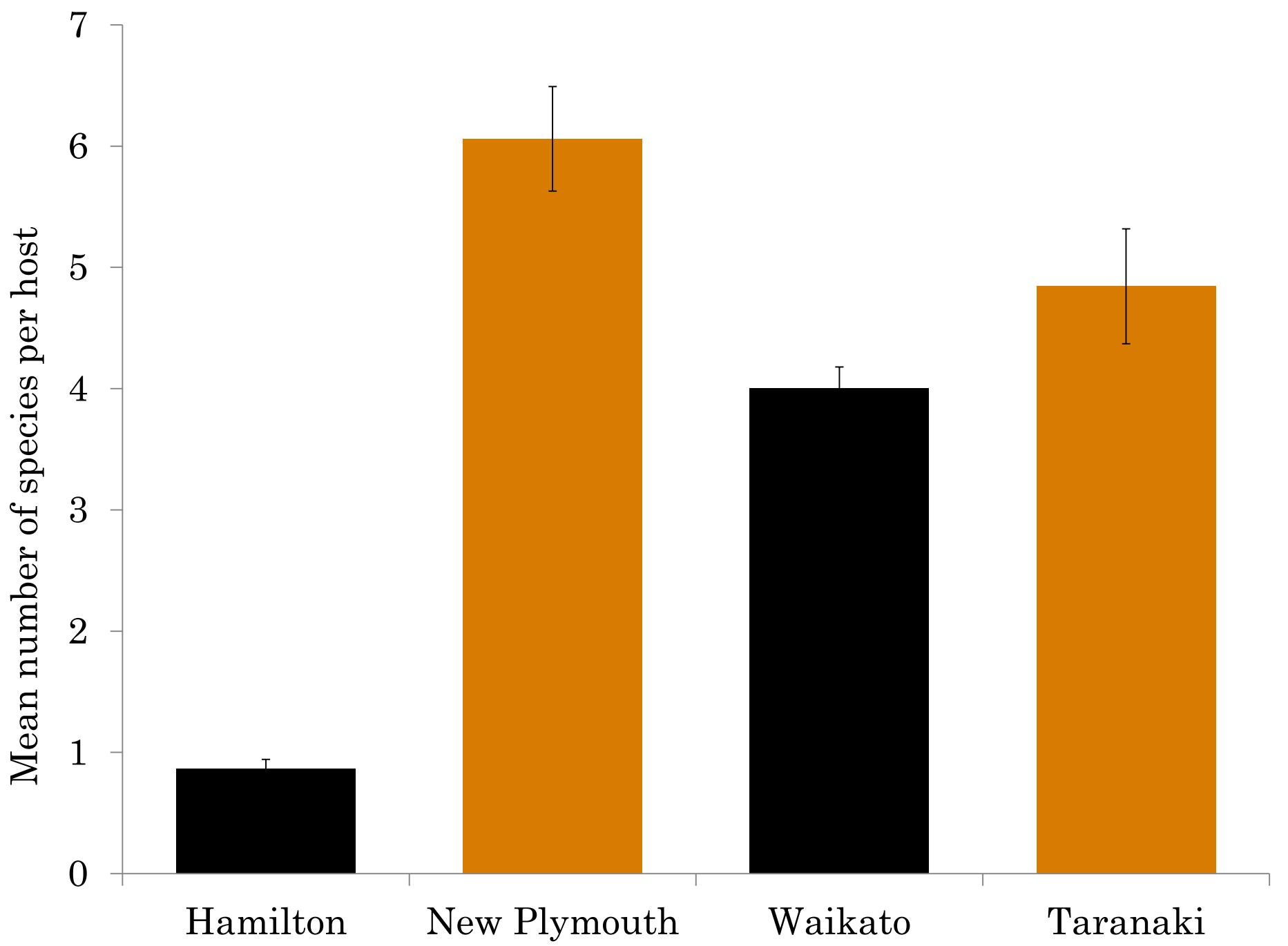


... and sometimes shrubs ...



45%
absent
in urban
forests

Epiphyte species	Urban	Non-urban
<i>Pyrrosia eleagnifolia</i>	✓	✓
<i>Asplenium flaccidum</i>	✓	✓
<i>Microsorum pustulatum</i>	✓	✓
<i>Metrosideros fulgens</i>	✗	✓
<i>Blechnum filiforme</i>	✓	✓
<i>Collospermum hastatum</i>	✓	✓
<i>Earina mucronata</i>	✗	✓
<i>Astelia solandri</i>	✓	✓
<i>Metrosideros perforata</i>	✓	✓
<i>Asplenium polyodon</i>	✓	✓
<i>Freycinetia banksii</i>	✓	✓
<i>Hymenophyllum sanguinolentum</i>	✗	✓
<i>Earina autumnalis</i>	✗	✓
<i>Microsorum scadens</i>	✓	✓
<i>Winika cunninghamii</i>	✗	✓
<i>Griselinia lucida</i>	✗	✓
<i>Tmesipteris tannensis</i>	✓	✓
<i>Ripogonum scadens</i>	✓	✓
<i>Lygodium articulatum</i>	✗	✓
<i>Muehlenbeckia australis</i>	✓	✗
<i>Ichthyostomum pygmaeum</i>	✗	✓
<i>Asplenium oblongifolium</i>	✓	✓
<i>Metrosideros diffusa</i>	✓	✓
<i>Collospermum microspermum</i>	✗	✓
<i>Drymoanthus aduersus</i>	✗	✓
<i>Parsonsia heterophylla</i>	✗	✓
<i>Leucopogon fasciculatus</i>	✗	✓
<i>Pittosporum cornifolium</i>	✗	✓







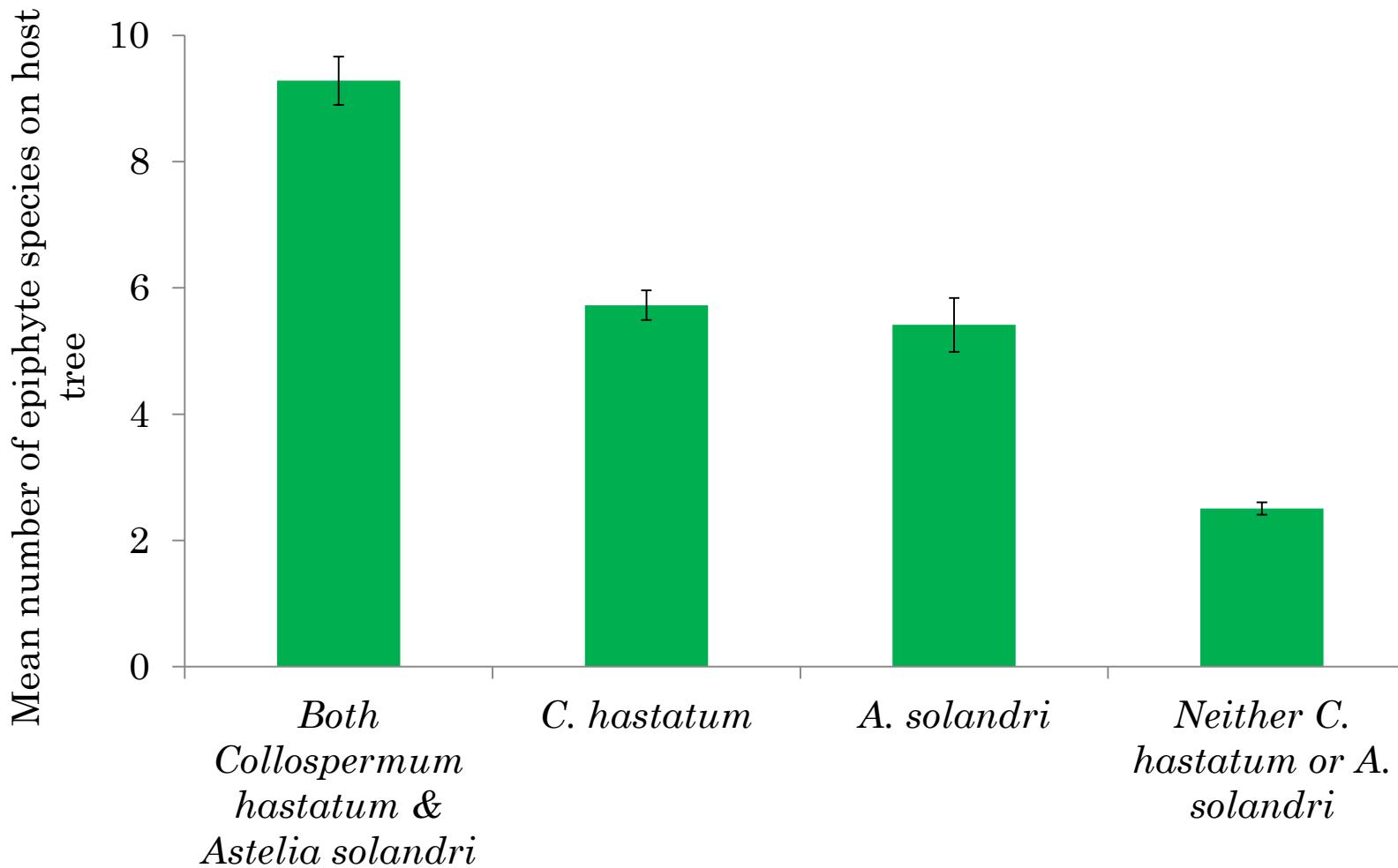


Astelia solandri

Colospermum hastatum



Species associations





Fragmentation
Dispersal distance
Architecture
Tree size
Temperature & humidity

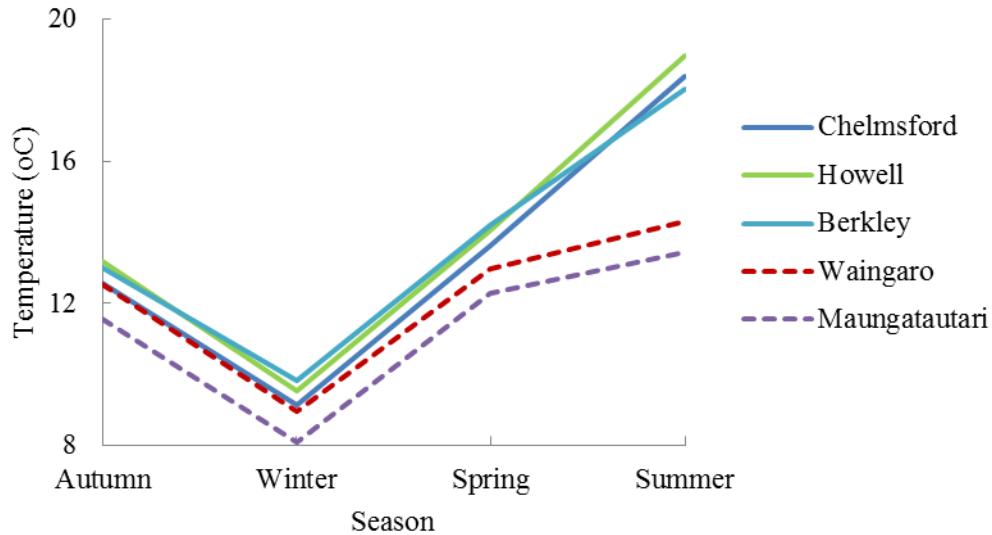
Waikato region forest remnants



Hamilton City forest remnants

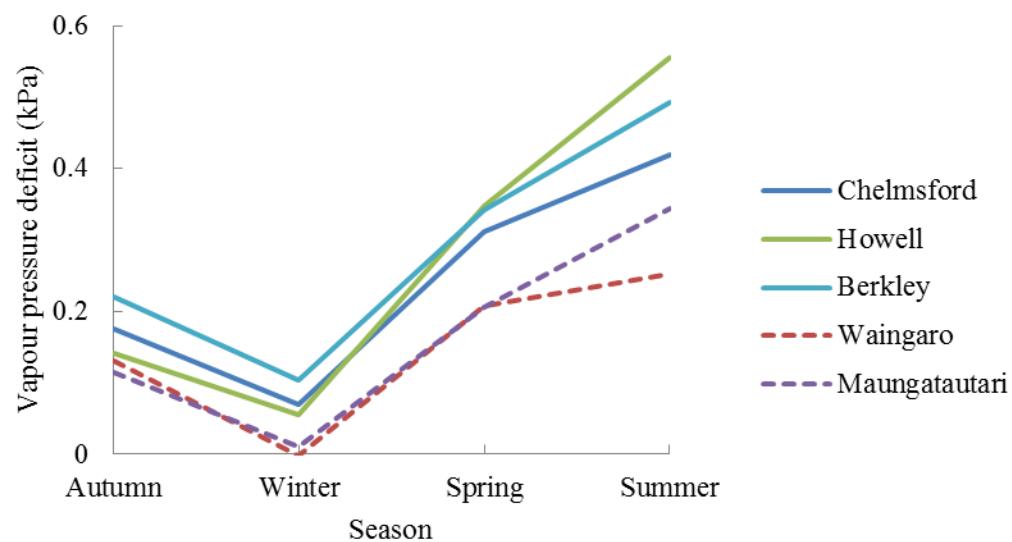


Microclimate



1.9 degrees warmer

1.1 kPa higher



Current epiphyte projects



1. Reintroduction trial
2. Camera feasibility
3. Field guide

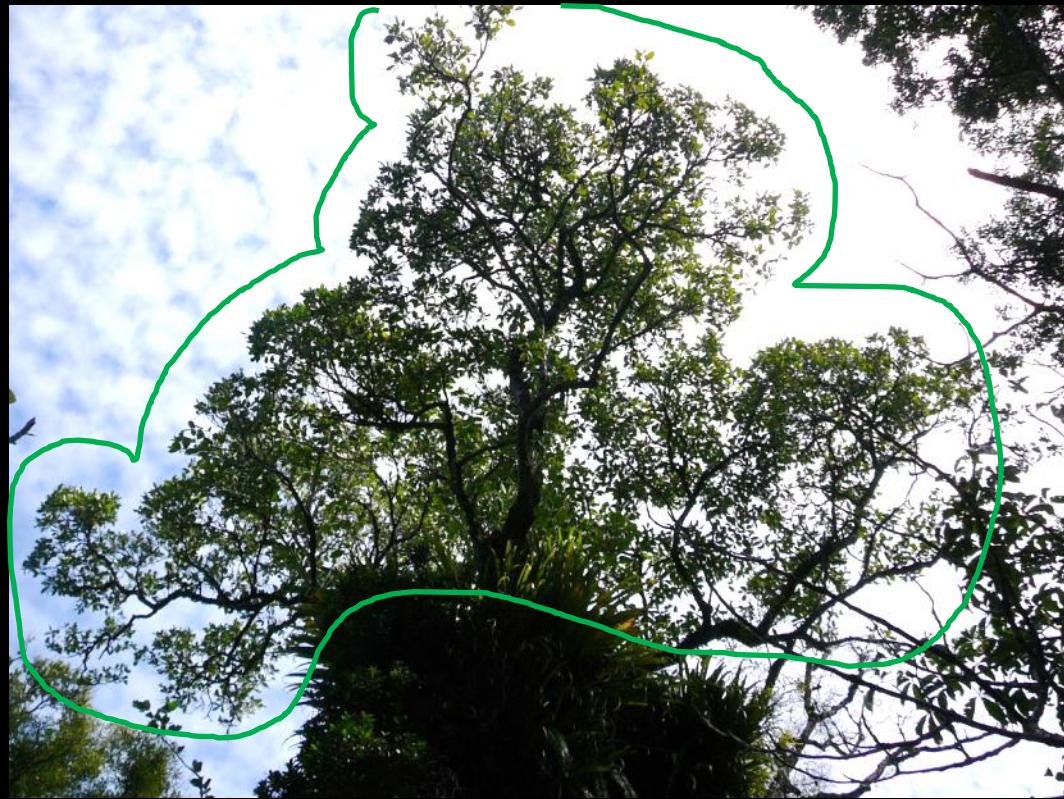
1. Reintroduction trial

- *Pittosporum cornifolium*
 - *Griselinia lucida*

Pittosporum cornifolium



Griselinia lucida







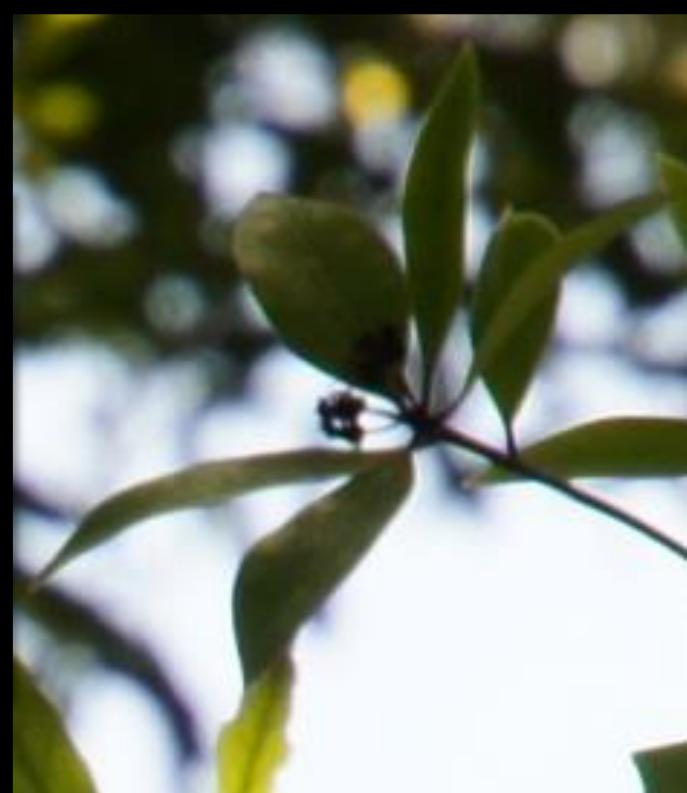


	1 month	5 months	9 months
New growth	0	33	30
Leaf loss	6	2	4
Wilting or dead	0	1	3









2. Camera feasibility







3. Field Guide

The image shows a Microsoft Word document window with a large grid of 13 columns and 18 rows of document thumbnails. Each thumbnail represents a page from a document, likely a manuscript or field guide. The thumbnails are heavily annotated with red and green highlights, underlines, and other markings, indicating they are ready for proof-reading. To the left of the grid is a vertical navigation pane containing a list of document names, such as 'Grammitis pseudonitata' and 'Grammitis rawlingsii'. The top of the screen features the Microsoft Word ribbon with various tabs and toolbars. The 'Normal' style is currently selected in the styles section of the ribbon.

Open to proof-reading
and photo contributions

RECAP

Depauperate populations

Stalled succession

Working on reintroductions,
understanding inhabitants &
increasing awareness

Thanks

Bruce Clarkson
Fiona Clarkson
Rachel Thomson

Photos:

Frog: Patrick Stewart
Falcons: Rich Seaton &
Brent Barrett
Pittosporum: Tony Foster
Weta: Stewart Baird
Kareao: Steve Attwood
Rata: Bruce Burns, Wayne Bennett,
Gillian Crowcroft, Steve Attwood
Google Earth

