Epiphyte biogeography and its importance to species conservation

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Understanding epiphyte distribution

• Improves understanding of factors influencing epiphyte autecology and their survival

• Helps identify priority sites for conserving the greatest number of epiphytic species and for targeted survey

• Helps select sites where epiphyte restoration could be undertaken
New Zealand’s herbaria house over one million specimens of plant, algae and fungi. The collecting information stored with these specimens provides an important picture of the distribution of New Zealand’s flora.

The New Zealand Virtual Herbarium (NZVH) is an online resource that provides immediate access to this invaluable information.
MUEHLENBECKIA ASTONII
This nationally endangered shrub has become a popular garden plant. Photo: Jeremy Rolfe

LATEST PLANT OBSERVATION
*Cordyline australis* was seen Flowering at Auckland Botanic Gardens by Bec Stanley on 20/11/2012.

LATEST NEWS
**NETWORK CONFERENCE 2013 - ANNOUNCEMENT**
The Network will be holding its next plant conservation conference in Auckland from 23 - 26 May 2013. [Read more...](#)
NZPCN flora statistics

- Species pages for 7,500 plant species
- 24,000+ plant photographs
- 1.4 million plant distribution records (1.3 million to be added soon)
- 450,000 users annually

Visits / week
NZPCN epiphyte database

108 native vascular epiphytic plants recognised
Using WRB Oliver’s classification:

- Typical (habitually epiphytic) – 58 taxa
- Occasional (usually grow terrestrially but can grow to maturity from epiphytic location) – 19 taxa
- Hemi (taproot epiphytes) - 11 taxa
- Ephemeral (establish as epiphytes but die before reaching maturity) – 20 taxa

DOC data: 250,000
Phenology: 10,000
Plant lists: 80,000
Recent plant observations

1) Calystegia marginata was seen
First fruiting at Auckland, Auckland City, Mt Albert, Jesmond Terrace, Auckland on 19/02/2013.

2) Earina autumnalis was seen
Flowering at Mt Karioi, Waikato District on 16/02/2013.

3) Samolus repens var. repens was seen
Flowering at Tomahawk Beach, Dunedin, Dunedin City on 13/02/2013.

4) Crassula moschata was seen
Fruiting at Tomahawk Beach, Dunedin, Dunedin City on 13/02/2013.

5) Pimelea villosa was seen
Flowering at Waitohu Estuary, Kapiti Coast District on 11/02/2013.

6) Cotula coronopifolia was seen
Flowering at Waitohu Estuary, Kapiti Coast District on 11/02/2013.

7) Solenogyne gunnii was seen
Fruiting at Auckland, Auckland City, Mt Albert, Gladstone School, Auckland on 11/02/2013.

8) Pennantia corymbosa was seen
Flowering at Whiskey Creek, Gore District on 11/02/2013.
Metrosideros robusta

SPECIES
Metrosideros robusta

ETYMOLOGY
Metrosideros: iron heart
robusta: sturdy

COMMON NAME(S)
Northern rata

THREAT STATUS
Non Threatened

STATUS
[All]
Metrosideros robusta (Hemi)

Gaps or restoration opportunities?
Asplenium faccidum (Typical)

Gap or restoration opportunity?
Threatened vascular epiphytes in New Zealand

- **Ackama nubicola** (Nationally Critical)
- **Adelopetalum tuberculatum** (Naturally Uncommon)
- **Asplenium shuttleworthianum** (Naturally Uncommon)
- **Brachyglottis kirkii** var. **kirkii** (Declining)
- **Davallia tasmanii** subsp. **cristata** (Nationally Critical)
- **Davallia tasmanii** subsp. **tasmanii** (Naturally Uncommon)
- **Dracophyllum arboreum** (Naturally Uncommon)
- **Drymoanthus flavus** (Naturally Uncommon)
- **Epacris sinclairii** (Naturally Uncommon)
- **Hebe barkeri** (Nationally Critical)
- **Metrosideros bartlettii** (Nationally Critical)
- **Nephrolepis brownii** (Naturally Uncommon)
- **Pittosporum kirkii** (Declining)
- **Pterostylis silvicultrix** (Naturally Uncommon)
- **Tmesipteris horomaka** (Nationally Critical)
- **Xeronema callistemon** f. **bracteosa** (Naturally Uncommon)
- **Xeronema callistemon** f. **callistemon** (Naturally Uncommon)
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<th>Typical</th>
<th>Occasional</th>
<th>Hemi-</th>
<th>Ephemeral</th>
<th>Number</th>
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<tr>
<td><strong>Critical</strong></td>
<td><strong>Tmesipteris horomaka</strong></td>
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<td><strong>Metrosideros bartlettii</strong></td>
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<tr>
<td><strong>Declining</strong></td>
<td><strong>Brachyglottis kirkii var. kirkii</strong></td>
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<td><strong>Ackama nubicola, Hebe barkeri</strong></td>
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<tr>
<td><strong>Naturally Uncommon</strong></td>
<td><strong>Adelopetalum tuberculatum,</strong></td>
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<td><strong>Dracophyllum arboreum</strong></td>
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- **Number**: 7, 6, 2, 2
Ackama nubicola (Nationally Critical, Ephemeral)

Habitat protection and long term monitoring
Adelopetalum tuberculatum (Naturally Uncommon, Typical)

Further survey work and research
Brachyglottis kirkii var. kirkii (Declining, Typical)

Restoration opportunities in North Island
Drymoanthus flavus
(Naturally Uncommon, Typical)

Further survey
Pittosporum kirkii (Declining, Typical)

Restoration opportunities
Xeronema callistemon f. bracteosa and callistemon (Naturally Uncommon, Occasional)

Long term monitoring
Metrosideros bartlettii (Nationally Critical, Hemi)

Habitat protection, restoration and long term monitoring
Re-estabishing a threatened epiphyte: *Metrosideros bartletti*ii

Approx. 25 adult trees left in the wild
Eight more threatened epiphytes:

**Three Kings:** *Davallia tasmanii* subsp. *tasmanii*  
(Naturally Uncommon, Occasional)

**Puketi Forest:** *Davallia tasmanii* subsp. *cristata*  
(Nationally Critical, Occasional) -

**Chathams:** *Dracophyllum arboreum* (Naturally Uncommon), *Hebe barkeri* (Nationally Critical), *Pterostylis silvicultrix* (Naturally Uncommon)

**Kermadec islands:** *Nephrolepis brownii* (Naturally Uncommon), *Asplenium shuttleworthianum* (Naturally Uncommon)

**Banks peninsula:** *Tmesipteris horomaka*  
(Nationally Critical)
Threatened epiphytic vascular plants in New Zealand
Help us improve the Network’s distribution database

• Register on the Plant Network website:  
  – www.nzpcn.org.nz

• Record observations of threatened epiphytes

• Record phenological observations – flowering and fruiting
Contributing observations to the Network’s distribution database will:

• Improve management of wild species
• Improve understanding of changing status and phenology of these taxa
• Provide those involved with ecological restoration of native species and ecosystems with useful data for:
  – Seed collection
  – Seed banking
  – Long-term monitoring of population condition