

Invasive thoughts



John Sawyer
NBN Trust





Hobbits caught possessing an evil weed

DAVE HANSFORD

AS PETER Jackson's epic film *The Lord of the Rings* screens around the world, thousands of people are being treated to a glimpse of New Zealand's natural beauty.

But for one filmgoer, the vision was spoiled by the appearance of a pest more villainous than Gollum himself.

Conservation Department biodiversity officer John Sawyer noticed this during the opening scenes. Frodo sat amid an infestation of tradescantia fluminensis, or wandering willie, a serious pest plant in Wellington, and apparently, Hobbiton.

"I was shocked to see that Middle Earth has weeds just like everywhere else.

"I spent the rest of the film trying to spot weeds as well as follow the story," he said.

Mr Sawyer said tradescantia had been brought to New Zealand from Brazil in 1916 as an ornamental plant.

"It's quite pretty in its rightful place and it's easy to grow, but it is almost too easy.

"The weed is now common throughout most of the country, and it is threatening native forests and reserves."

He said fragments of the plant broke off and could spread quickly.

"That's why when people try to get rid



“...a pest more villainous than Gollum himself...”

DOC officer hopping mad over Hobbiton

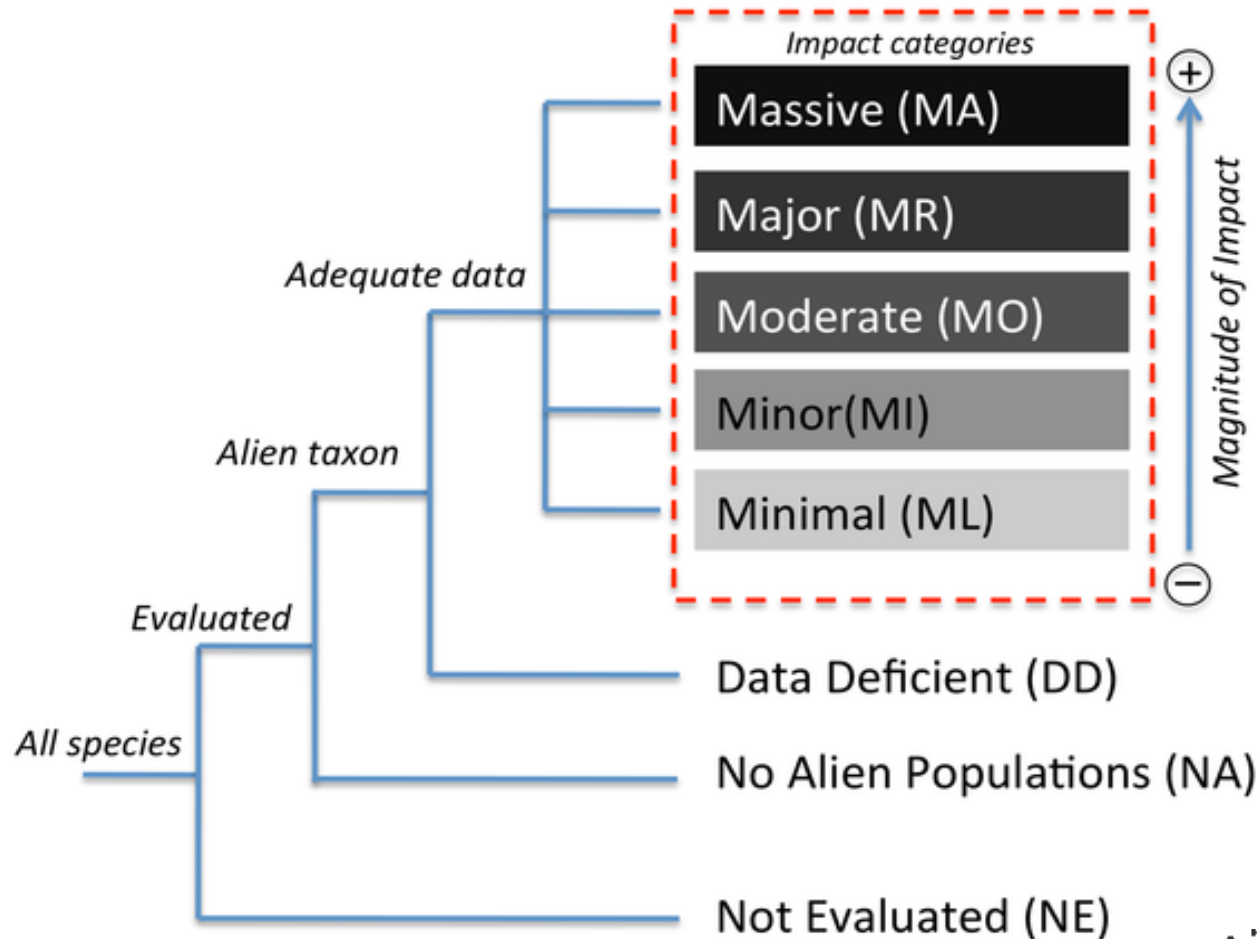
The first shot of Hobbiton in the *Lord of the Rings* has conservation officer John Sawyer fuming.

Independent Herald
By Lindsay James Feb 19 2002

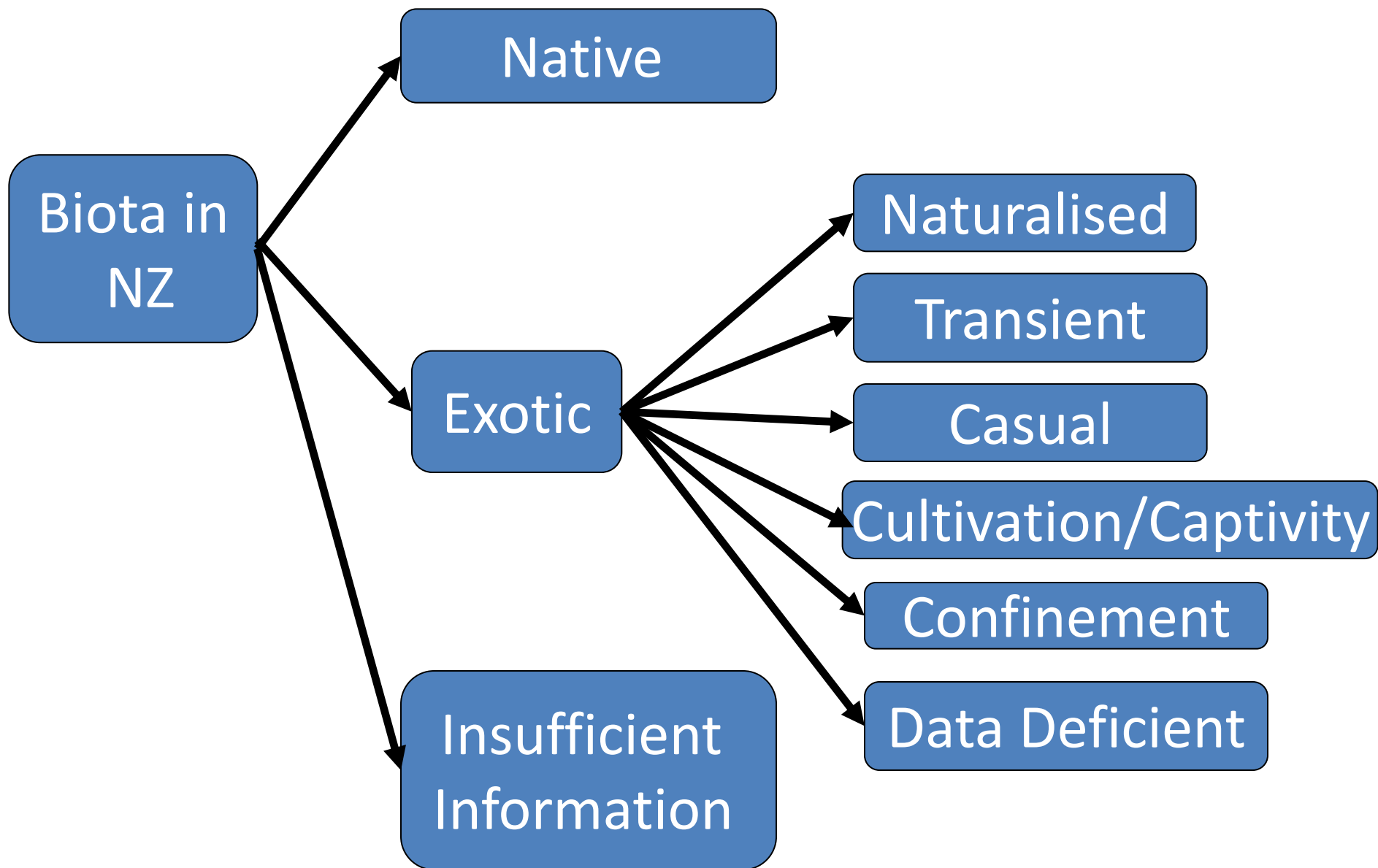
What is an invasive species?



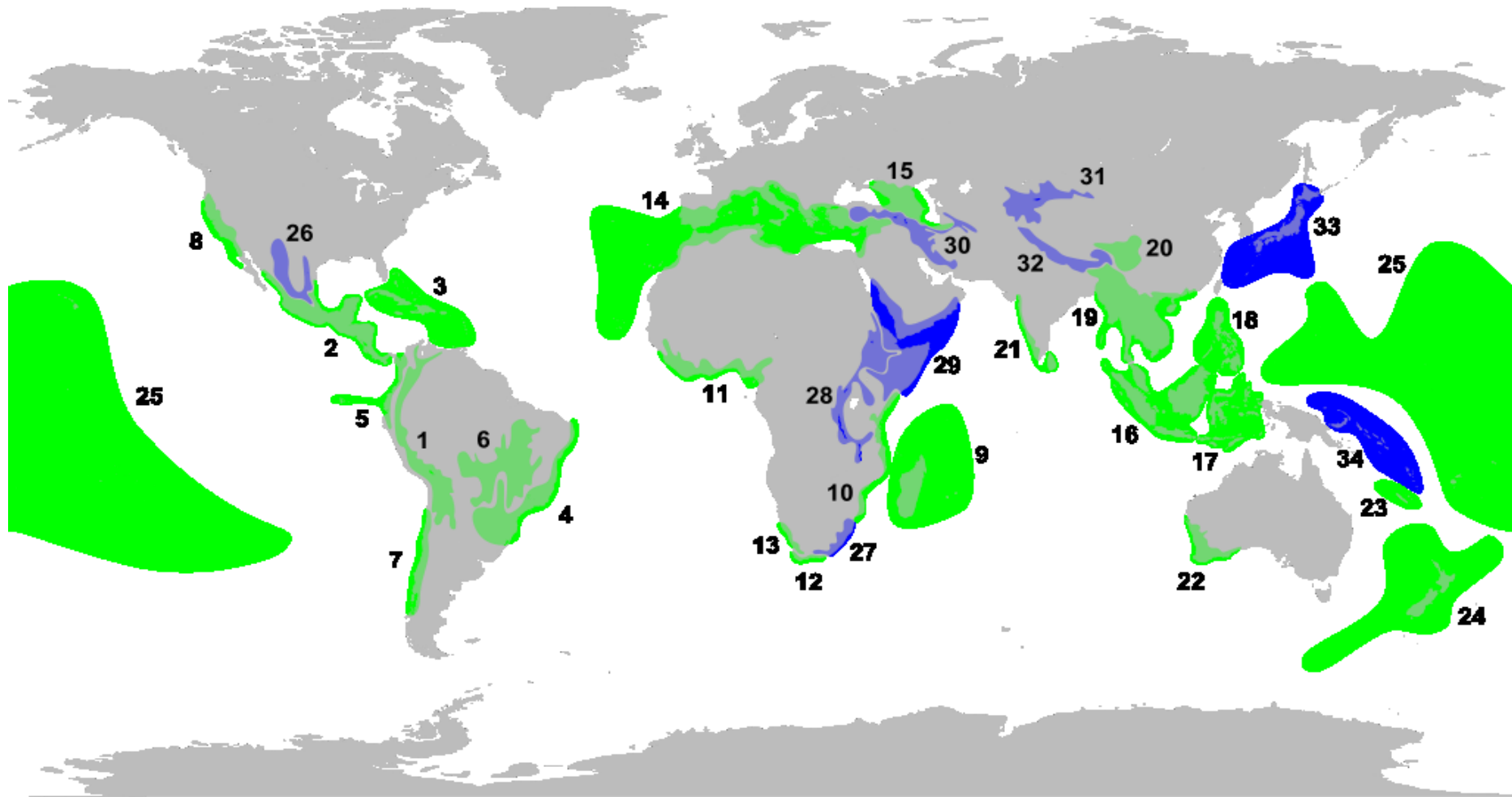
Classification: Alien species impact scheme



Exotic species classification system



Global biodiversity hotspots



Myers, N., R. A. Mittermeier, C. G. Mittermeier, G. A. B. da Fonseca, and J. Kent. 2000. Biodiversity hotspots for conservation priorities. [Nature 403:853-858](https://doi.org/10.1038/403853a)



Photo: jidanchaomian, via Flickr. Distributed under a CC BY-SA 2.0 license



1,984

Species of native vascular plant not found
anywhere else in the world





“New Zealand is as close as we will get to the opportunity to study life on another planet”

Jared Diamond, 1990

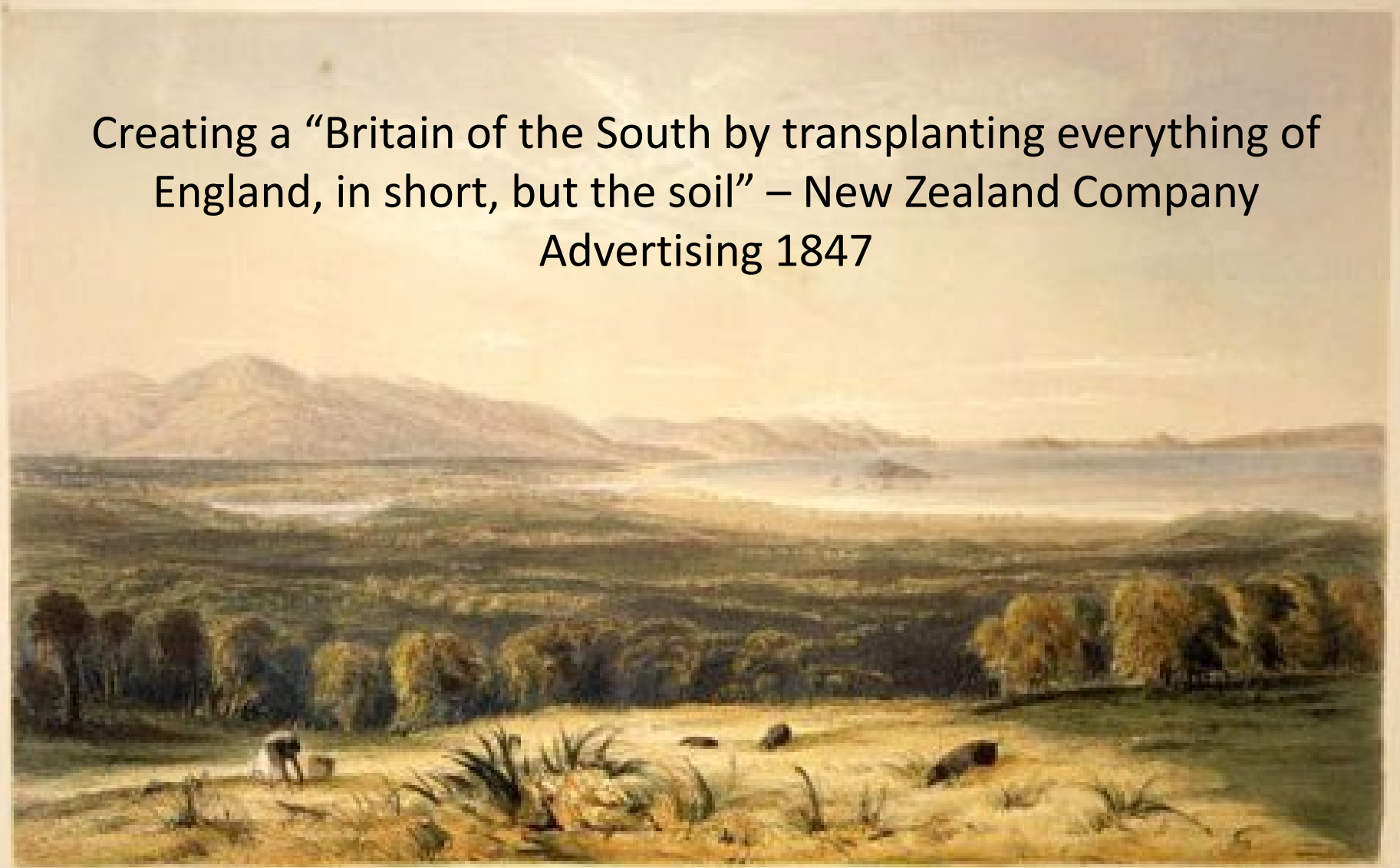
New Zealand's invasive species problem

Native plants here!!!



PART NICHOLSON, JOHN HUGHES, FITZGERALD, & CO.

Creating a “Britain of the South by transplanting everything of England, in short, but the soil” – New Zealand Company Advertising 1847



1847

John Hughes, 1847

John Hughes, 1847

The endemic products of New Zealand...are perfect one compared with another; but they are now rapidly yielding before the advancing legions of plants and animals introduced from Europe.

Charles Darwin 1859: *On the Origin of Species*





Kauri dieback is a microscopic fungus-like plant pathogen (a disease causing agent) that only affects kauri





Significant tree mortality observed



Rock snot

Didymosphenia geminata







Kopuatai Swamp

Japanese honeysuckle



Image © 2007 DigitalGlobe
Image © 2007 TerraMetrics

© 2007 Google™

NZ Biosecurity Legislation

- NZ Biosecurity Act 1993
 - Power to make unwanted species illegal (nationally and regionally)
 - an offence to sell, propagate, breed, release or display an unwanted organism or pest
 - Provides for a National and Regional Pest Management Strategies
- Biosecurity implied in other Acts:
 - Reserves Act
 - Conservation Act
 - Resource Management Act

Challenges for biosecurity in New Zealand

Awareness

- Demonising pests to gain public support
- Economic importance of some pests
- New types of pest and disease (e.g., phytopthera)
- Shifting baselines and acceptance



SEEDS

ROUGH
ISY
Best Places



RUSSELL LUPINS

Classical Roadside Colour



Zealand Native

New Zealand Wattleflower

MANUKA

TEA TREE
Early Settler's Tea Substitute

CABBAGE TREE

TI KOUKA



KAKA BEAK

KOWHAI NGUTU KAKA
Named After New Zealand's Native Parrot



New Zealand Native

CLEMATIS

PUAWHANANGA

**BEWARE
OF GOATS
NEXT 70 km**



Gorse

Poplars

Willows

Broom

STOP NEW ZEALAND GETTING UGLY.

Didymo (or rock snail) is an alga that could squeeze the life out of some of our country's most precious waterways. It is vital that everyone who comes into contact with any of our rivers and lakes helps to save the rest of our uniquely beautiful spots from this pest. Please Check, Clean, Dry any gear that comes into contact with the water, between every waterway. We have the best minds in the world working on the problem, but right now, we need a hand from you as well. Find out how to Check, Clean, Dry visit www.biosecurity.govt.nz or call 0800 80 99 66.



NEW ZEALAND. IT'S OUR PLACE TO PROTECT.

Control and Data

Control

- Need for urgent response
- Overstated risk and misapplied effort
- Fragmentation of effort
- Limited efficacy of eradication
- Lack of skills and funding

Data

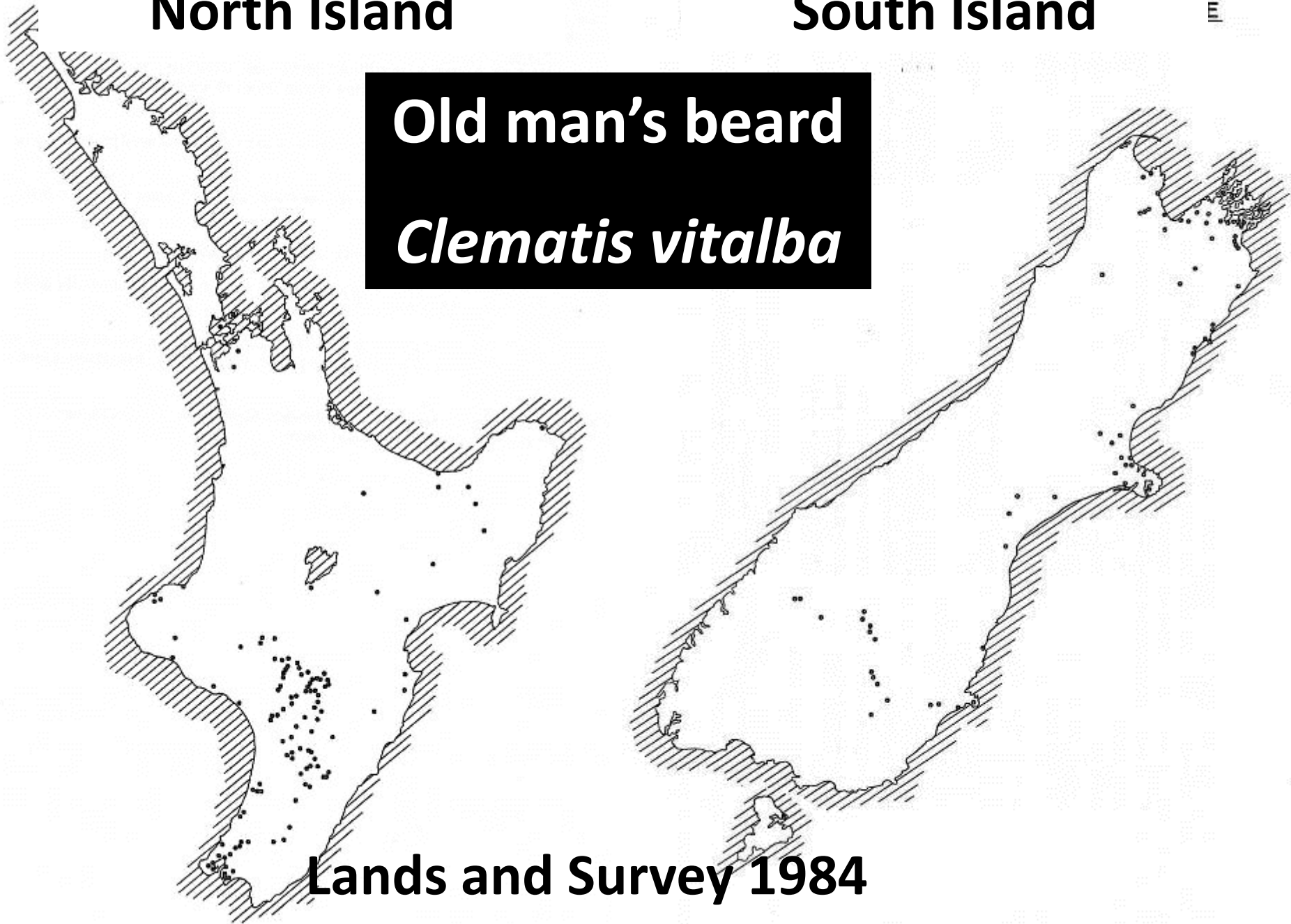
- Mobilising existing data
- Speed of data flow to people that kill pests
- Identification skills

North Island

South Island



Old man's beard
Clematis vitalba



Lands and Survey 1984

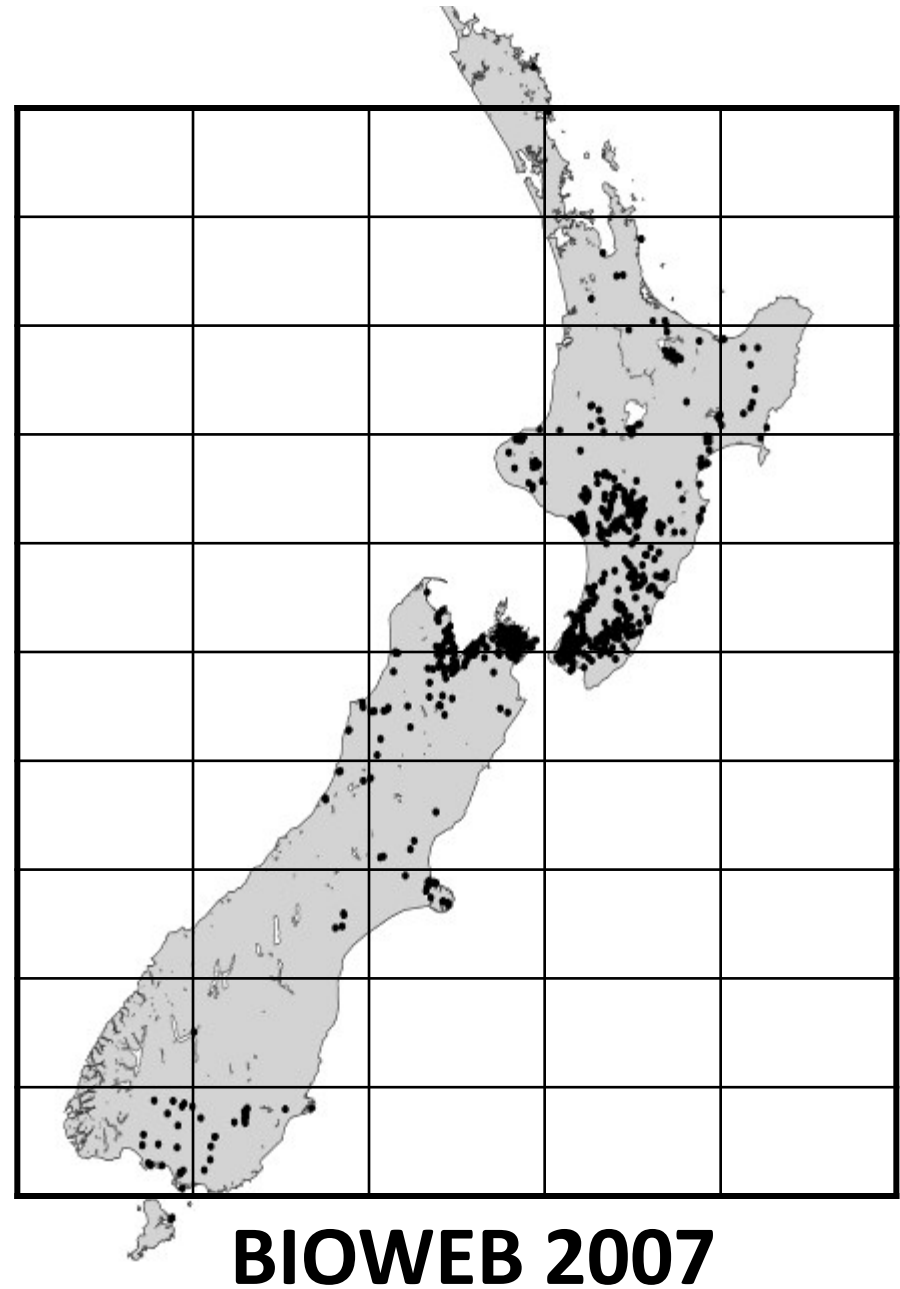
Old man's beard

1984

26.4% of grid squares occupied

2007

40.6% of grid squares occupied



Asparagus or kahikatea?



Recording pests in NZ

NZ PLANT CONSERVATION NETWORK
Roopu hononga Koiora Taiao ki Aotearoa

MEMBER LOGIN | JOIN  

Home Flora Threats Ecosystems Publications Conservation NZPCN Contact Us Help



MUEHLENBECKIA ASTONII
This nationally endangered shrub has become a popular garden plant. Photo: Jerem...

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

FIND OUT HOW TO RECORD YOUR OWN OBSERVATIONS...


SEARCH FLORA
Latin/Common Name...

QUICK SEARCH

NATURE SPACE
Ecological Restoration in Aotearoa

Group login

Home About Us Groups Resource Centre Community Notices Add My Group Contact Us




City Beaches Reveal Our Careless Habits | view story
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

You can search for a restoration group using the search field, clicking on the map, or by selecting 'view all groups' on this page.

Register your New Zealand restoration group (or yourself if you are an individual landowner) by clicking on the **Add My Group** tab and adding information about who you are, and what you are doing. You can include news items, documents, images and monitoring data. You can also use the site to connect with groups working near you or in similar ecosystems.

Group Search

[View all groups >](#)

Group Map


Group Data
973,116 plants in the ground
7,044 possums killed
2,260 stoats killed

New Zealand eBird



Home About eBird Submit Observations View and Explore My eBird


[Sign In](#) | [Register as a New User](#) Translate to:

Welcome to New Zealand eBird
Where are the birds?

Birding News and Features
[200 Countries, 8665 Species, and Counting!](#)
 November 02, 2010

When Chet Ogan submitted a checklist on the 22nd of October for Bangladesh, he probably didn't realize that this was our first checklist for the country. More than that, this checklist represented the 200th country* where eBird now has at least one checklist. This includes 8665 species contributed by over 45,000 people. We would like to thank our passionate eBirders for contributing their observations to eBird where they can help research and conservation efforts, not just in North America, but around the world. There are still many countries that lack eBird checklists, and many species have yet to be reported. Read on to find out which ones.

Tiakiina nga uri o te wao tapu nui a Tane • Forest Monitoring
FORMAK



Welcome to FORMAK - The Forest Monitoring Kit

[FORMAK Forest Monitoring Manual](#)
Contains all the explanations and instructions you need to get started.

[FORMAK Field Kit](#)
Find out about the field kit and how to purchase it.

[Data Entry](#)
This is where you log in to enter your FORMAK data

[Reports](#)
Generate tables and charts from your data

[Training](#)
Find out about the training courses available

This web site forms part of a monitoring kit designed for immediate use by land owners, landcare groups...

Welcome!
NatureWatch NZ, where you can record what you see in nature, meet other nature lovers, and learn about the natural world.

Learn!
About NZ Species!

Record!
Add Observations!



Candelabra Aloe
Observer: Jan
Observed: Aug 12, 2006
Added: Nov. 22, 2012
[View »](#)

Genus Octopus
Observer: emaning
Observed: Nov 16, 2002
Added: Nov. 21, 2012
1  | [View »](#)

Zorion guttigerum
Observer: grahame
Observed: Nov 21, 2012
Added: Nov. 21, 2012
2  | 2 IDs | [View »](#) 



MUEHLENBECKIA ASTONII

This nationally endangered shrub has become a popular garden plant. Photo: Jeremy Rolfe

SEARCH FLORA

QUICK SEARCH

TEST YOUR PLANT KNOWLEDGE

try
the **flora quiz**

LATEST PLANT OBSERVATION

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

FIND OUT HOW TO RECORD YOUR OWN OBSERVATIONS...

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...](#)

Action on invasive pests in NZ

50 years of rat eradications

- 1964 - 0.5% of NZ's islands predator-free
- Maria (Ruapuke) Island - £5 grant to the Forest and Bird Protection Society and Don Merton
- 2014 – 10% of NZ's islands predator-free

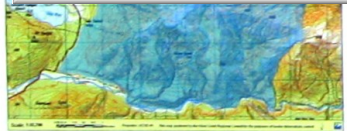
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18/07.



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Unauthorised removal of signs c

**Dr Jan Wright
Parliamentary
Commissioner for the
Environment**

*Unless 1080 is used over
larger areas of the
mainland, kiwi could vanish
from unprotected areas
within a generation and
native birds could
disappear from New
Zealand's forests*





Plant me instead

Plants to use in place of common and invasive
environmental weeds in the lower North Island

JULY 2005

Promoting ‘friendly’
alternatives to exotic
weeds



Department of Conservation
Te Papa Atawhai



For emergencies Phone 111



PROTECT OUR KAURI

Kauri dieback disease is killing kauri trees.
It spreads via soil movement. Act now to stop its spread.

ALWAYS

- > Keep to the defined tracks
- > Clean your footwear before and after leaving kauri forest areas
- > Stay away from kauri tree roots

Report sightings of diseased kauri to the Kauri Dieback Response Team on 0800 NZ KAURI or visit www.kauridieback.co.nz



TRACK CLOSED

until 30 November 2010
KAURI DIEBACK DISEASE ZONE

Lower Kauri Track is closed until 30 November 2010 to help contain the spread of Kauri dieback disease. Please consider this when planning your journey.

KEY | Track Closed X



For more information www.kauridieback.co.nz or 0800 NZ KAURI





Totara (Podocarpus totara) fruit, perfect for collection in February. Photo by Matt Ward.

Ecosourcing seeds and plants | view story

- 1 2 3 4 5 6 7 8 9 10 11 12

Welcome

Nature Space is a website for groups, individuals and landowners undertaking ecological restoration in New Zealand. The conservation work carried out by these communities is vital not only for the intrinsic value of our biodiversity, but also for the health and prosperity of New Zealand.

There are hundreds of community restoration groups and individual landowners in New Zealand dedicating time and effort to restore our native ecosystems.

You can search for a restoration group using the search field, clicking on the map, or by selecting 'view all groups' on this page.

Register your New Zealand restoration group (or yourself if you are an individual landowner) by clicking on the **Add My Group** tab and adding information about who you are, and what you are doing. You can include news items, documents, images and monitoring data. You can also use the

Group Search

Search

[view all groups >](#)

Group Map



Group Data

577,230 plants in the ground
2,702 possums killed
036 ...

GROUP DATA

1,415,918 plants in the ground

16,578 possums killed

3,984 stoats killed

4,923 rats killed

28 million sq m of weeds

240 groups active

28,433 group members



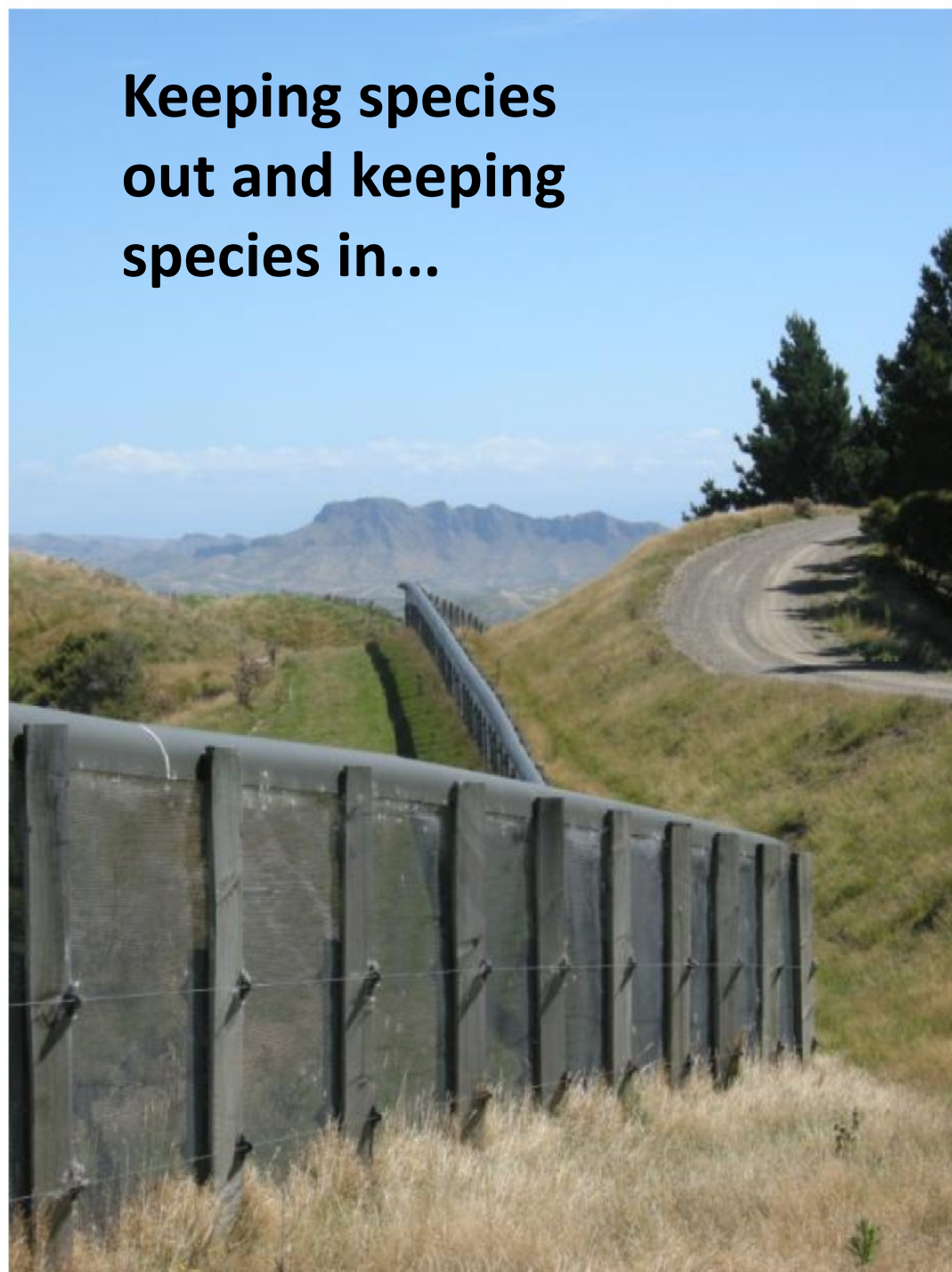
www.naturespace.org.nz

Biodiversity fences

Exclude animal pests
(rats, possum, stoats,
cats etc)

To provide
sanctuaries for
endangered biota

Keeping species
out and keeping
species in...

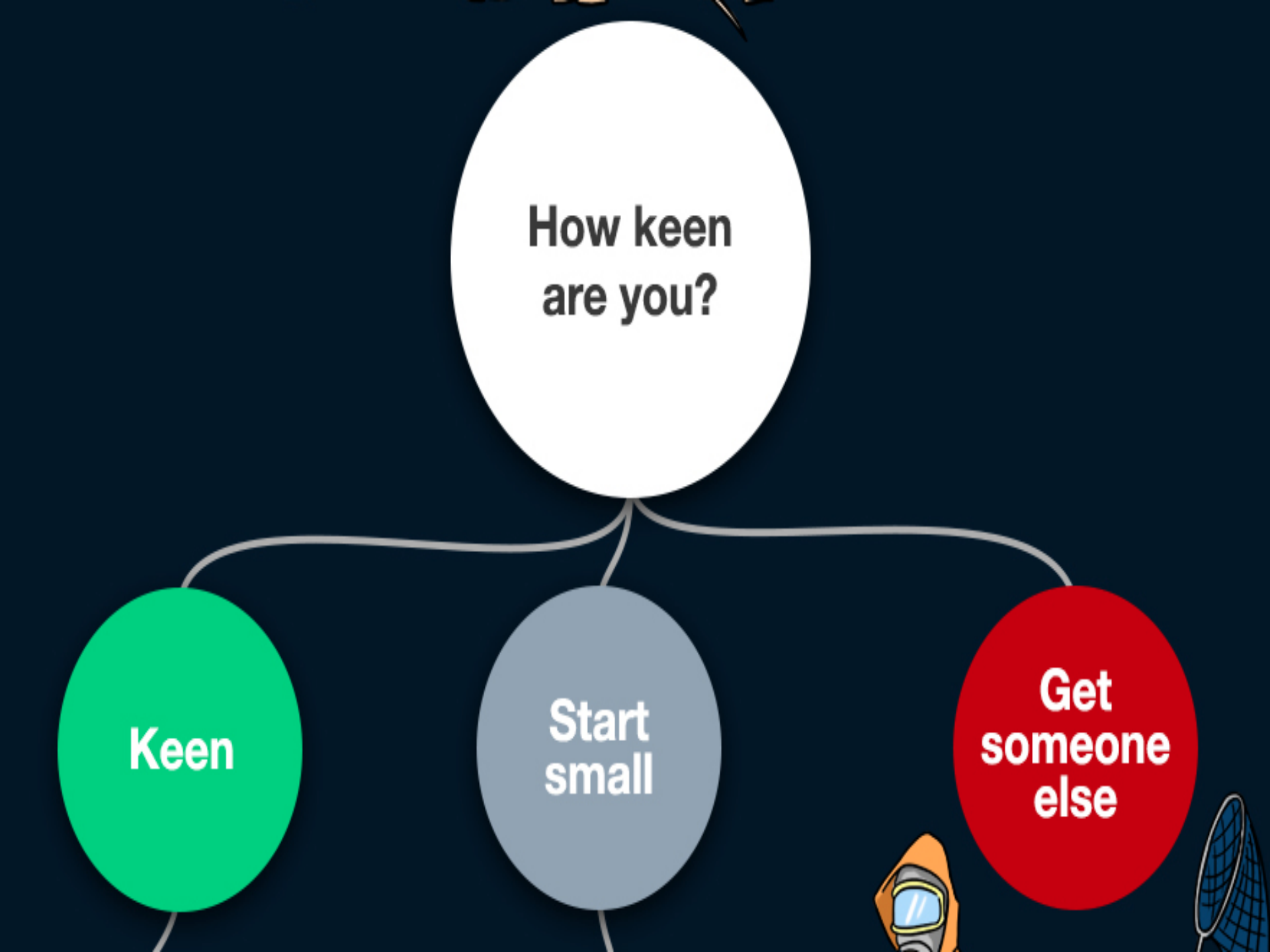


Enhancing the halo:

To make Wellington NZ's natural capital
by making all back yards into safe
havens for native wildlife



**How keen
are you?**



```
graph TD; A((How keen are you?)) --- B((Keen)); A --- C((Start small)); A --- D((Get someone else));
```

Keen

**Start
small**

**Get
someone
else**

Providing traps
and training

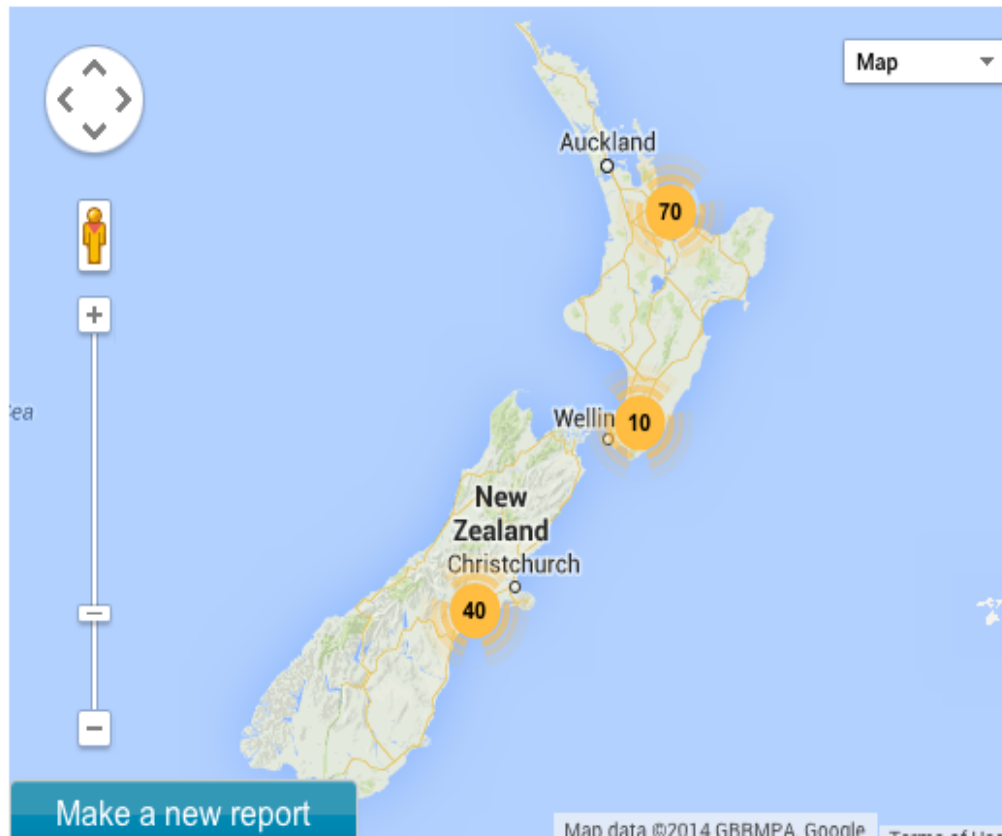


Cats to go

That little ball of fluff you own is a natural born killer

Every year cats in New Zealand destroy our native wildlife. The fact is that cats have to go if we really care about our environment.

Take a look at where colonies of roaming cats are located in New Zealand



Would you make this cat your last to help save NZ's wildlife?

38%
of Kiwi's said they would

Data sourced from Campbell Live and Catstogo surveys

80%
of people surveyed **DO NOT**



Cats
to
Go

Home

Why not to have a cat

Your cat is not innocent

NZ Without cats

The SPCA catastrophe

Report a wandering cat

What you can do

Make a new report

Map data ©2014 GBRMPA, Google



Kea. Photo: Herb Christophers

To protect our endangered native species
by eliminating the threat of predators.



Role of the National Biodiversity Network





Mission:

We are an ever-growing network of individuals and organisations, recording and caring for the UK's wildlife data and making it universally accessible to everyone





101 million records (and counting)
827 species datasets
Hub for 150+ wildlife organisations
A family of people and projects
100 NBN members – close to 6 million
people



Role of NBN?

- Central, national view of pest status
 - document changes over time
 - connectivity to existing resources
 - risk assessments, status and priorities (UKSI)
 - mobilise more open data
 - promote greater activity on priority species and sites
- Enhanced information
 - faster data flow
 - more complete coverage
 - set minimum standards for data publishing
 - natural language generation to motivate and inform

NBN conference: Friday 21 November **Royal Society, London**



Final invasive thoughts

- What would we do if we were starting from scratch?
- Invasives cause irreversible loss, change can be fast
- Vital to raise awareness and make people care
- Data flow and data access are important:
 - Improve time to market
 - Complete and open
 - Show progress, regular reporting of change

Final invasive thoughts

- Less about the data but what you do with it
- Less about the threat but whether anything can be done
- Prevention is best, fast response essential
- UK needs to take biosecurity seriously
 - National AND Regional biosecurity borders
 - Need for UK Biosecurity Act?
- NBN can support capture, curation reporting, and promoting invasive species information

Final invasive thoughts

- Empowering “Citizen-action” can make a huge difference (but community cannot do it all):
 - Nature Space UK
 - Pest Free UK
 - Connecting GB non-native projects to more detailed action planning and reporting
 - iSpot as the basis for learning about pests
- Supportive legislation helps but big goals make for bigger outcomes
- Invasive species is about action not atlases!