

Sanctuaries:

What are they and where are they going?

John Innes
Landcare Research
HAMILTON



Intro to sanctuariesnz.org
workshop, 20 Aug. 2013

21- 1-05 24H
16:44:22







House mouse



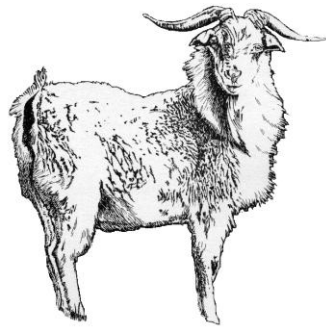
Red deer



Norway rat



Hedgehog



Feral goat



Ship rat



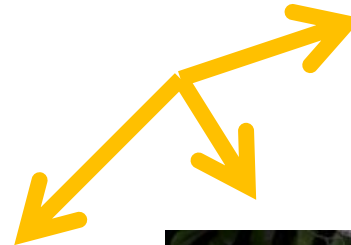
Feral cat



Stoat

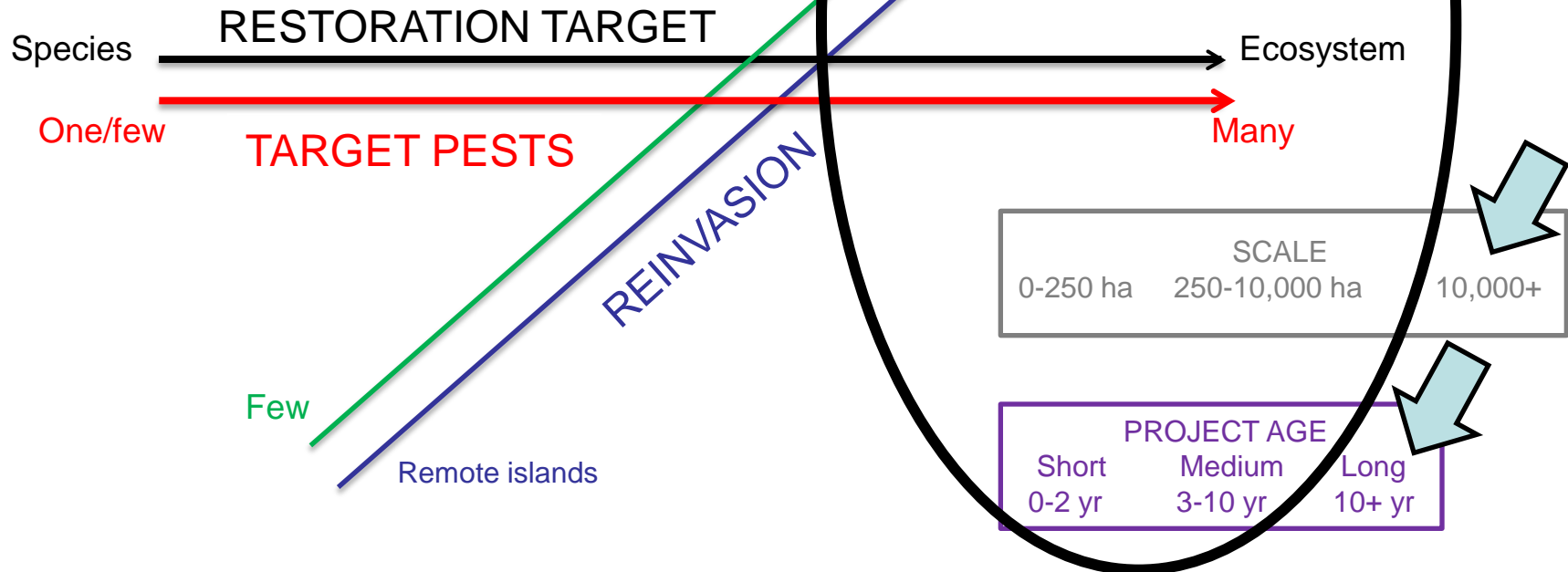


Brushtail possum



What drives sanctuary management and research?

COST and SUSTAINABILITY
Who works and who pays?
(DOC, RC, Iwi, Trust, Individual)



Offshore Islands

- Rodent eradications on NZ offshore islands
 - 1960 – present
 - 1 ha Maria Island
 - 11,000 ha Campbell Island
- Sea a barrier to pest reinvasion
- Sea also prevents many native species leaving



Photo: P. Tyree



Photo: K. Jones

Early mainland species recovery programmes

NI kokako



Mapara



Ship rats

Possum



NI brown kiwi



Waikaremoana



Stoat

Mohua



Eglinton



Island eradications + mainland spp. projects = mainland sanctuaries



+



North Island kokako



Brown kiwi



Mohua

=



Eg Maungatautari

DOC mainland islands

- Six sites, est. 1995-97
- Ecosystem restoration goals
- Primary focus on learning

But

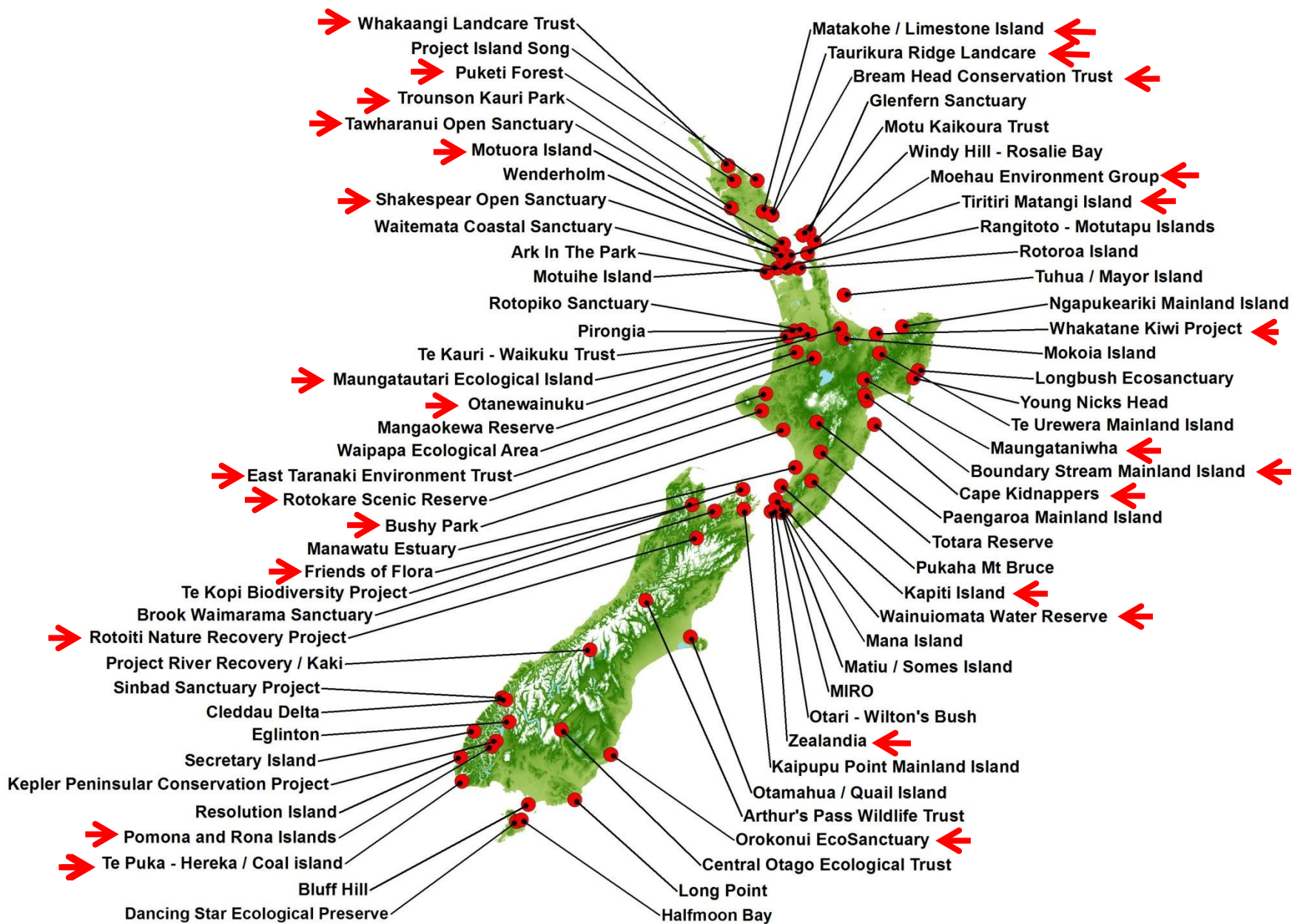
- So far, poorly collated/published
- Uncertain future

What are 'biodiversity sanctuaries'?

Sites that:

- experimentally restore NZ ecosystems to indigenous dominance and full species complement
- control or eradicate a broad suite of pests with best practice techniques
- reintroduce missing species
- manage a permanent and substantial risk of pest reinvasion
- inspire and galvanise communities to local conservation

We identified 74 such projects on or near the
NZ mainland

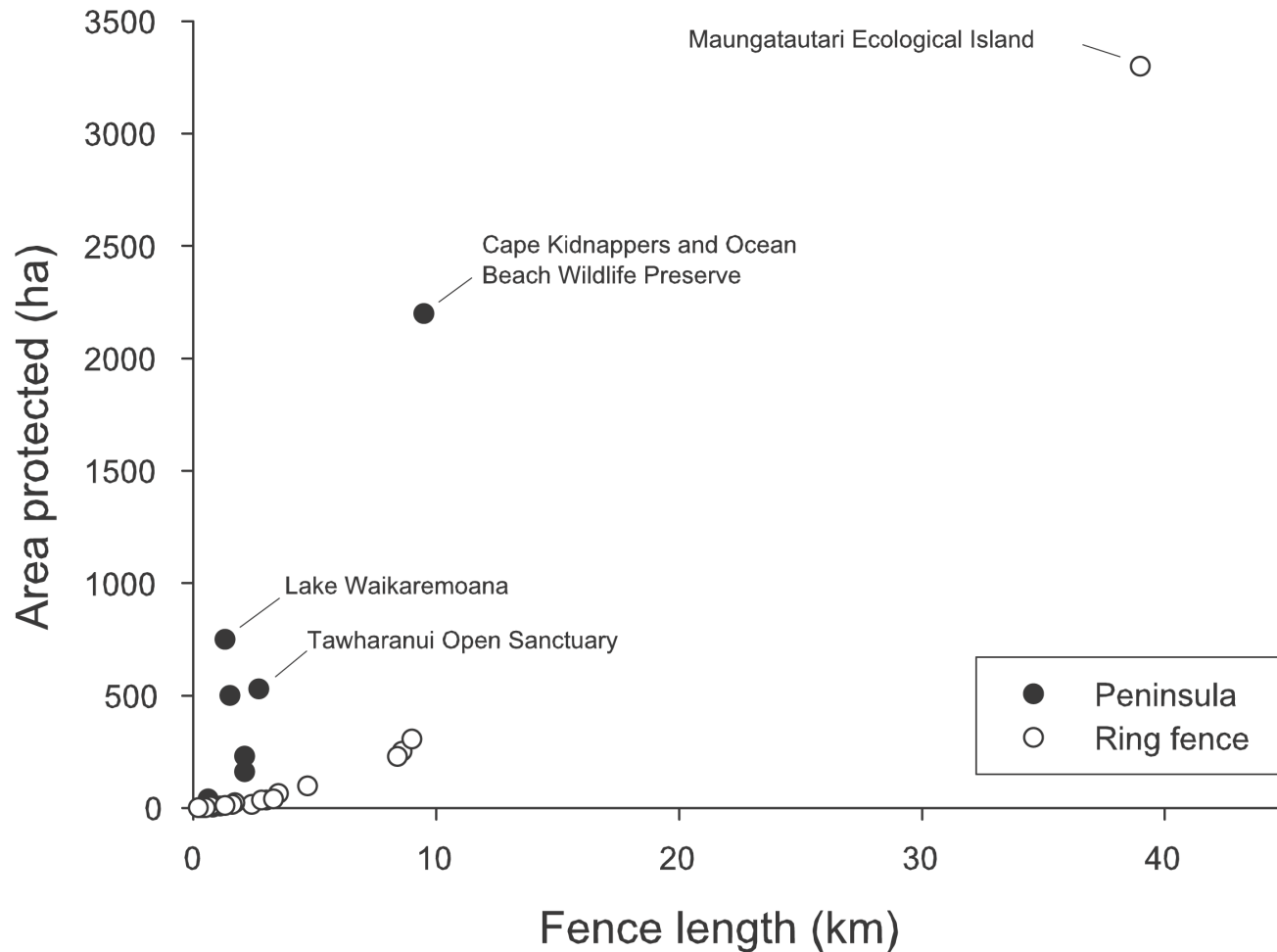


Management

- Pest-fenced – 15% of area. Mean 690 ha.
 - Not pest-fenced – 52% Mean 827 ha.
 - Near-shore islands – 33% Mean 1140 ha.
 - Mean 2.6 partners/project (DOC in most)
-
- Mean area ship rat control 792 ha cf stoats 2274 ha
 - 37,230 ha mainland ship rat control; 106,900 ha stoat control



Fenced sanctuaries



“The creation of these sanctuaries enclosed by predator-proof fences often creates small expensive zoos surrounded by degraded habitat that will never be able to sustain the animal and plant species contained within the fence”

Scofield RP, Cullen R, Wang M 2011. Are predator-proof fences the answer to New Zealand's terrestrial faunal biodiversity crisis?
New Zealand Journal of Ecology 35: 312-317.

Mainland (or near) sanctuary management

Advances:

- Multi-species eradications
- Hunting down survivors for eradication
- Active invader management
- Many stakeholders (opportunities = volunteers, paying public, corporate sponsorship, research; risks = diverse views; substantial people management)
- Towards coordinated national network

Opportunities:

- Select priority environments/sites
- National monitoring of key outcomes
- Spatial links - lead 'pest-free NZ'?

Community-based entrepreneurship*

- 45 semi-structured interviews
- Community-driven, not agency-led
- Clear trigger: Shared perception of ecological loss, together with motivation to act *in the landscape that has meaning for that community*
- Five key success factors
 - community ownership
 - governance
 - relationship with government agencies
 - leadership
 - shared vision

*Campbell-Hunt *et al.* 2010 *Int. J. Innovation & Reg. Dev.* 2: 4-20

Benefits of fencing??



Hihi - stitchbird



Tieke - saddleback



Little spotted kiwi



Cook Strait
giant weta
D. Thornburrow

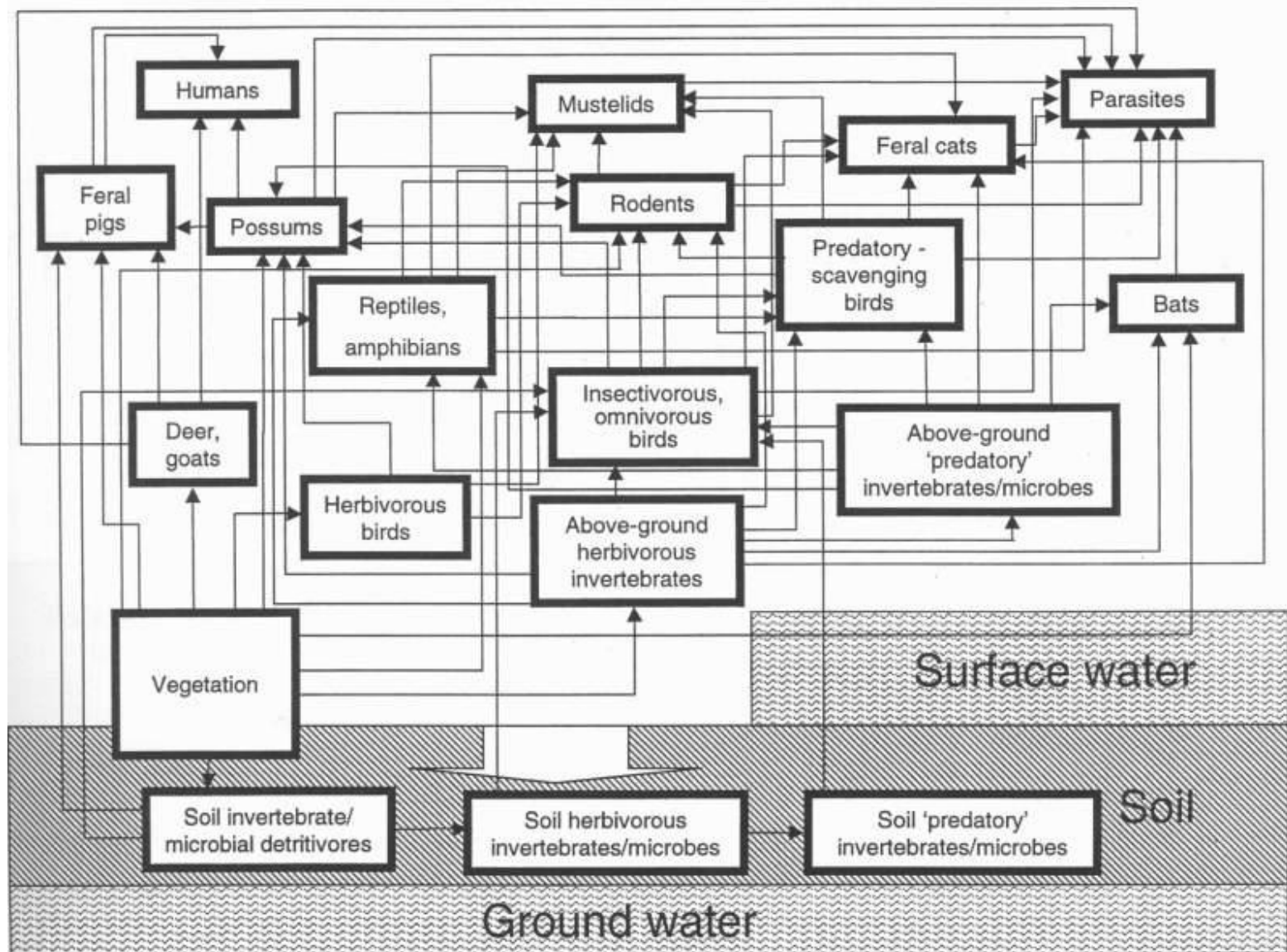


Kakapo ?

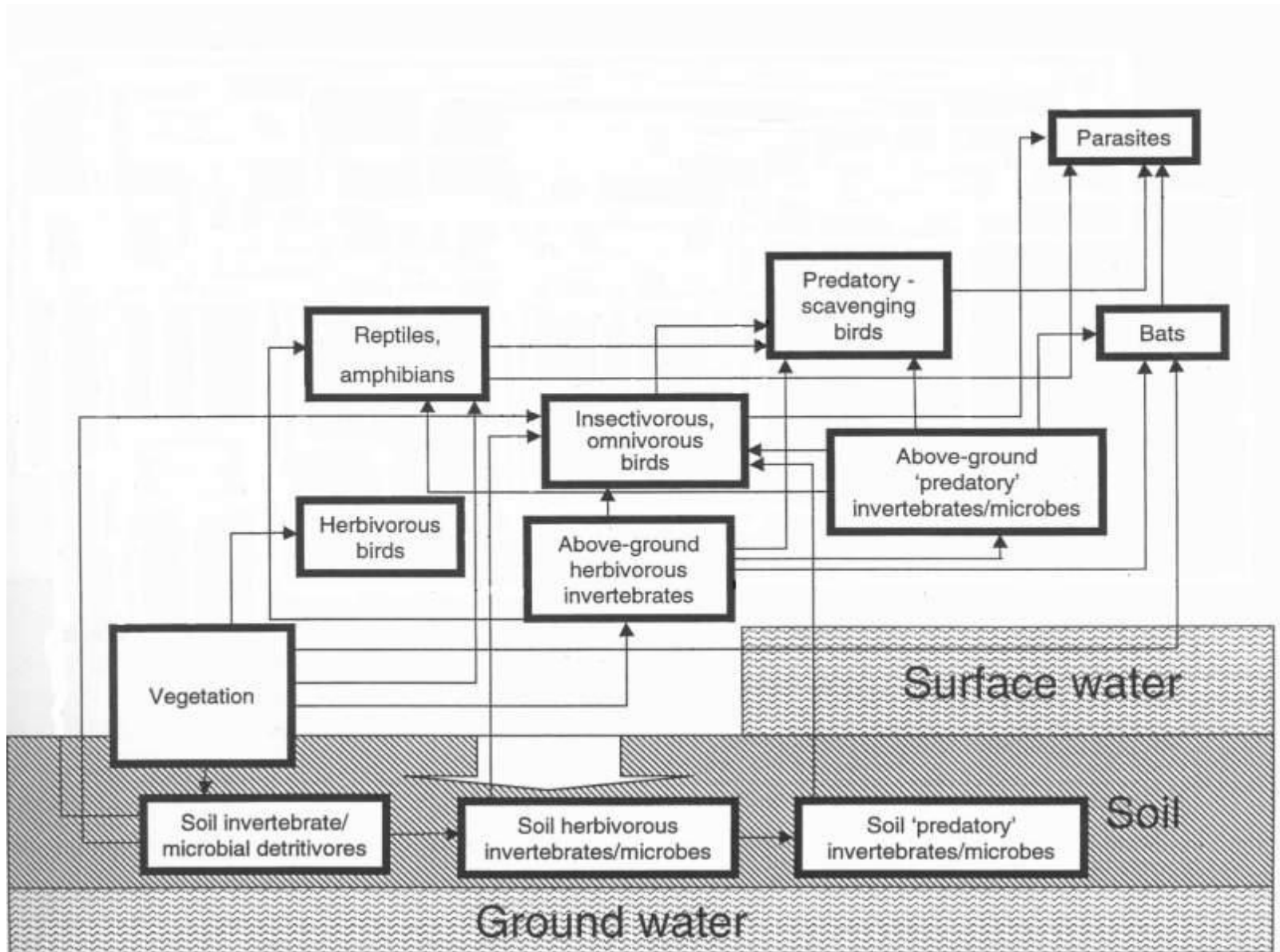


Duvaucel's gecko

Current situation

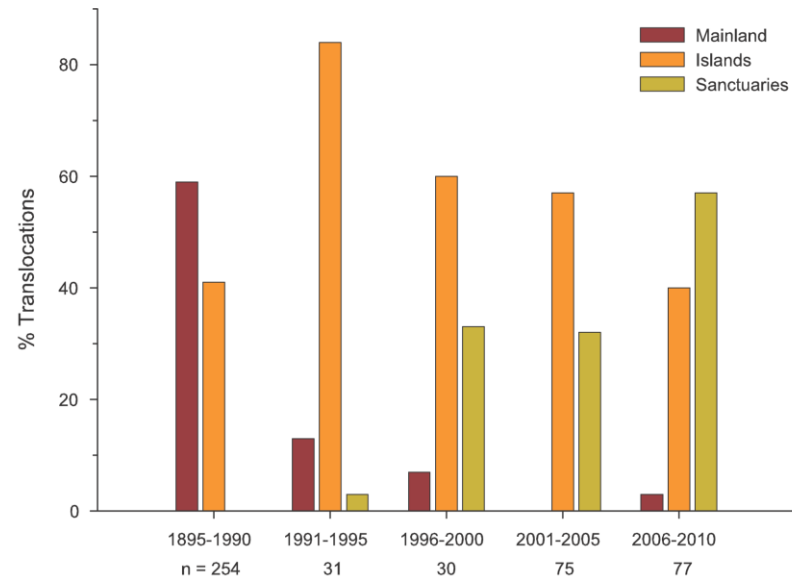


Ecological release!

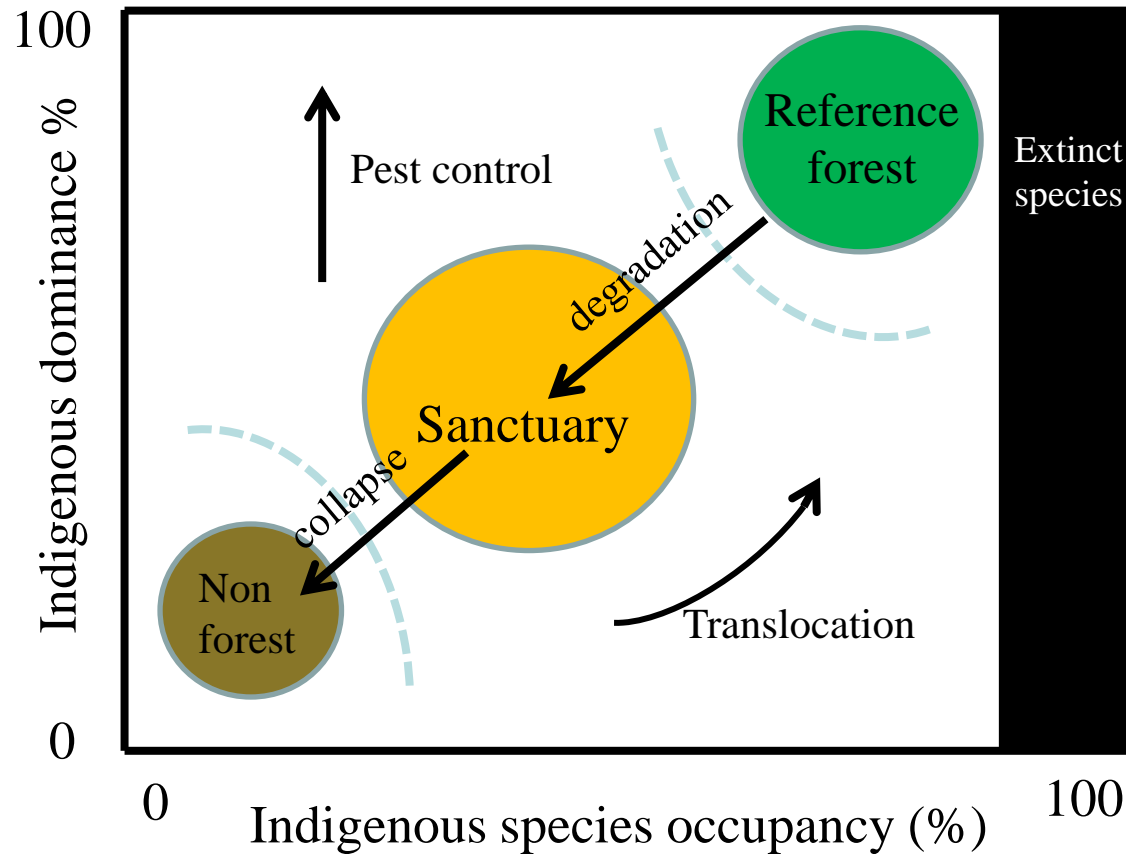


Do sanctuaries drive biodiversity restoration?

- Not in large (10,000+ha) mainland areas
- Most frequent translocation destination
- Have single-handedly returned iconics to mainland



- As case studies, show biodiversity responses under two major residual pest abundance scenarios
- At last, ambitious attempts to meet key legislation and goals
- By public involvement, may be critical advocacy pathway



Conceptual restoration model

Are sanctuaries sustainable?

- Strong part of NZ culture
 - Increasingly accessible
 - Charging \$\$ inevitable
 - Fences will work, and diversify
 - Are fences worth the extra money?
 - Monitoring can decline?
-
- Integration of many schemes at landscape level is the future.