2012 Sanctuaries Workshop
Taranaki 9-10 August

John Innes

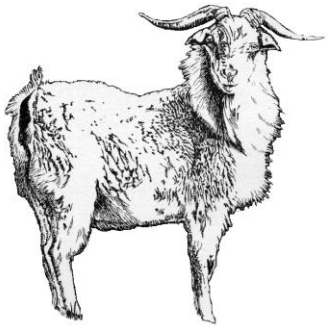
Landcare Research
HAMILTON

House mouse

Red deer

Norway rat

Hedgehog



Feral goat

Ship rat

Feral cat

Stoat

Brushtail possum

Island eradications + mainland spp. projects = mainland sanctuaries

+

North Island kokako

Brown kiwi

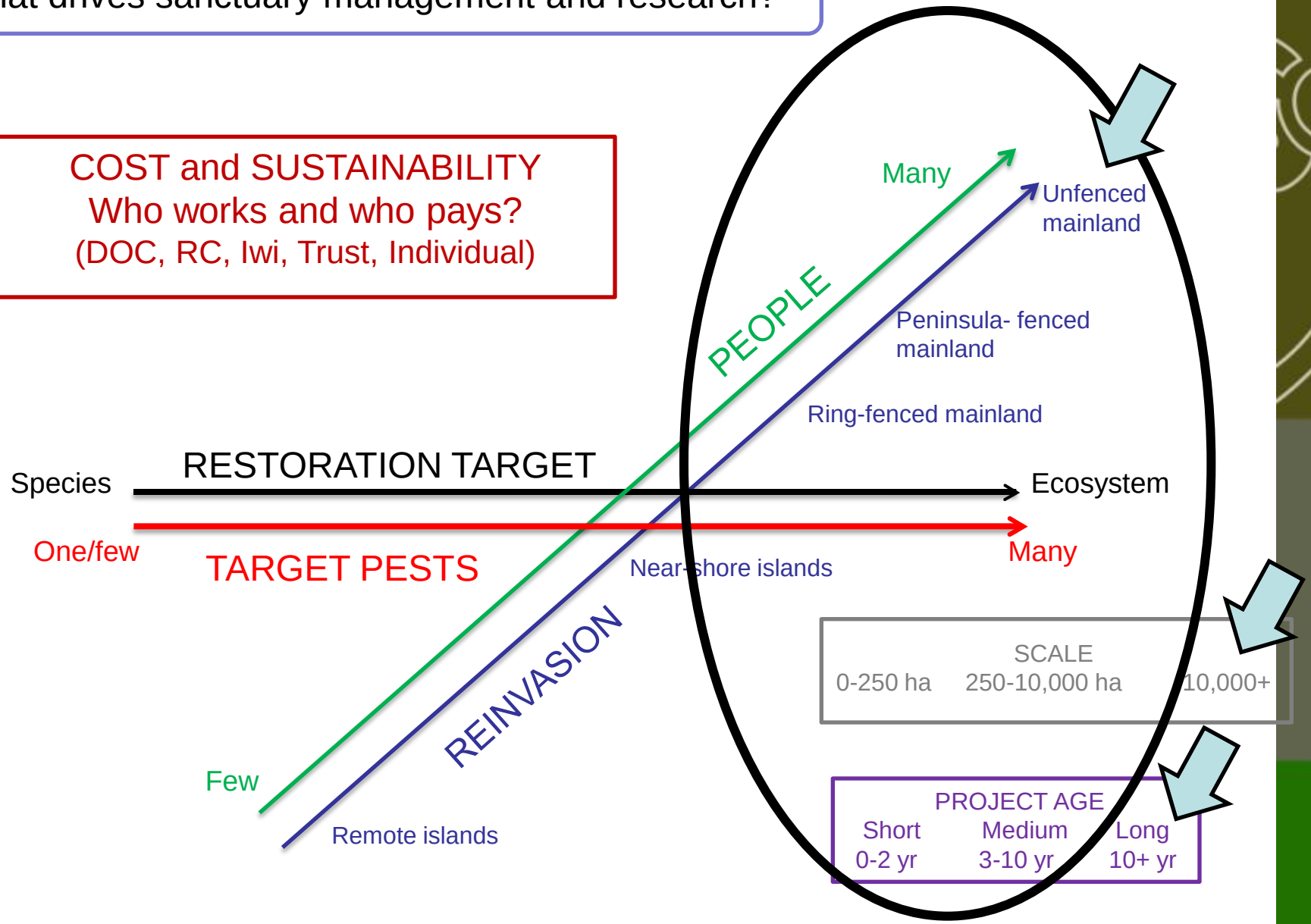
Mohua

=

Maungatautari

What drives sanctuary management and research?

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



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
- manage a permanent and substantial risk of pest reinvasion
- reintroduce missing species
- inspire and galvanise communities to local conservation

We identified 63 such projects on or near the NZ mainland

Map by Neil Fitzgerald

Sanctuary area

- 47 mainland sites 37,230 ha
- 16 near-shore or freshwater islands 18,250 ha
- Total area 55,480 ha

- cf. pest-free islands – 32,000 ha (Bellingham et al. 2010)

Total sanctuary area is 0.21% NZ land area

Management

- Pest-fenced – 8280 ha (15%). Mean 690 ha.
- Not pest-fenced – 28,950 ha (52%). Mean 827 ha.
- Near-shore islands – 18,250 ha (33%). Mean 1140 ha.
- Mean 2.6 partners/project (DOC in most)

- Mean area ship rat control 792 ha cf stoats 2274 ha

Community-based entrepeneurship*

- 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

1952-2008

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

"So there's a huge collective of different people coming from different angles. It's not just an environmentalist group or not just a commercial group… there's people spinning in all sorts of different spheres and all coming together and adding their little bit to the whole jigsaw"

"There have been a lot of people from a lot of different backgrounds, different interests, different skills that have combined together to make the sanctuary what it is''

---

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

Major themes of value attributed to community sanctuaries*

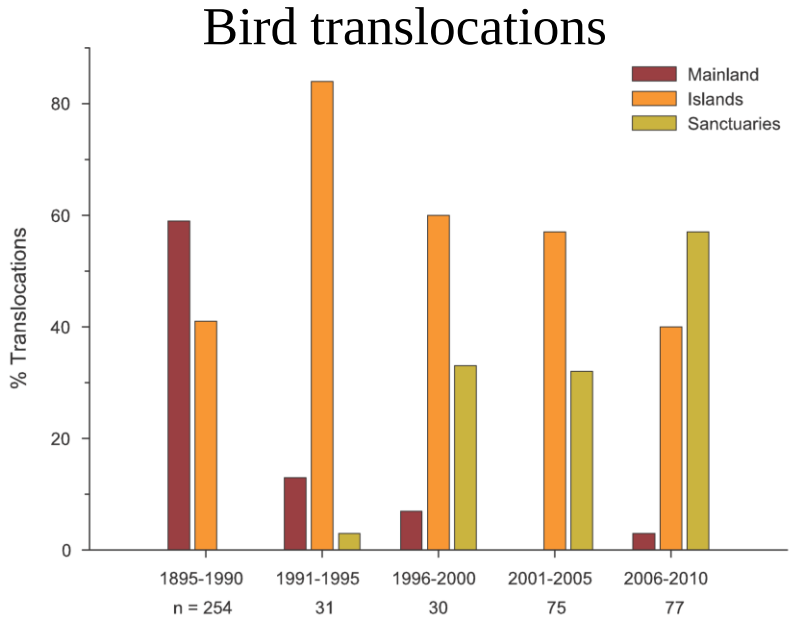
- Improves the condition of the local environment
- Facilitates learning and sharing of knowledge
- Builds a sense of community
- Strengthens people's connection to place
- Helps shape the future of local regions

* Hilary Phipps, unpublished PhD data

Do sanctuaries drive biodiversity restoration?

- Not in large (10,000+ha) mainland areas

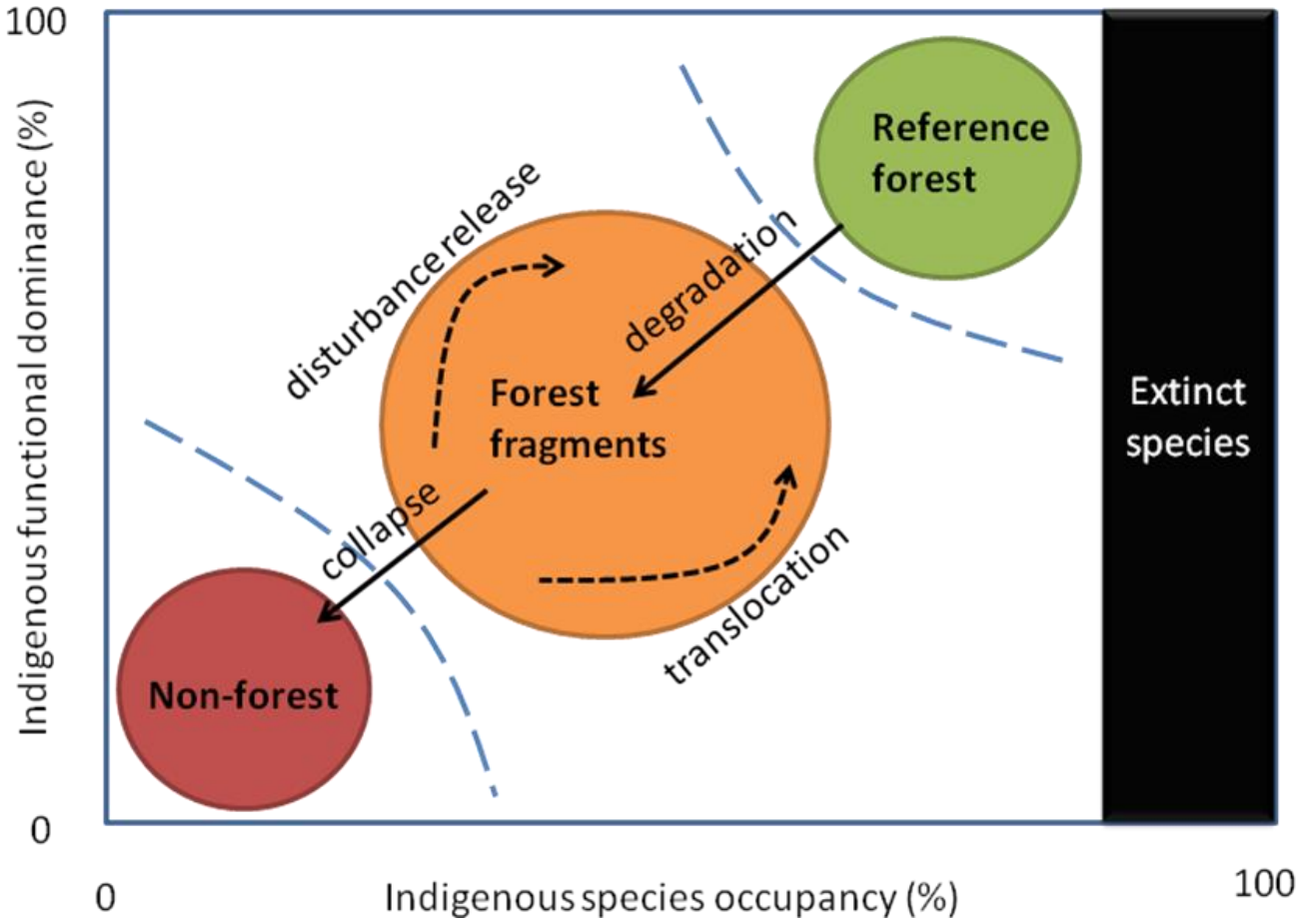
- Most frequent translocation destination
- Have single-handedly returned iconics to mainland



- 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 model for forest fragments

(Dodd 2009 after Lee et al. 2005)

"A review of pest-exclusion fences throughout New Zealand shows that the goals of fence projects are frequently not achieved and cost-benefit analyses often do not adequately quantify ongoing costs. 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"

" We emphasise, however, that what is critically important here is the preservation of taxa that will become extinct without immediate intervention, not the somewhat illusory goal of the preservation of an exact copy of a prehuman functional ecosystem"

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.

"Here we dispute some of their evidence, describe the conservation context and achievements of fenced sanctuaries, and show that pest-fenced projects have distinctive and important roles among the diverse approaches addressing biodiversity restoration in New Zealand. This arises primarily from their ability to achieve zero or near-zero residual abundance of nearly all mammal pests in mainland environments, and to capture public interest and involvement with exceptional advocacy and education opportunities that should benefit all conservation"

Innes J, Lee W, Burns B, Campbell-Hunt C, Watts C, Phipps H, Stephens T 2012. Role of predator-proof fences in restoring New Zealand's biodiversity: a response to Scofield et al. (2011).
New Zealand Journal of Ecology 36: 232-238.

"We note that Innes et al. do not question the fundamental points of our thesis: (1) fence costs have not been properly assessed and evaluated; (2) that fenced sanctuaries enhance conservation of species has not been properly evaluated; (3) cheaper methods exist to achieve significant improvements in species' threat status at national levels".

"We contend that there are too many endemic species that require management to prevent their extinction and these require investment ahead of addressing the much more expensive and philosophically problematic goal of intact ecosystem restoration and protection"

Scofield RP, Cullen R 2012. Fenced sanctuaries need critical evaluation: a reply to Innes et al. (2012).
New Zealand Journal of Ecology 36: 239-242.

“It still seems pertinent to ask these questions:

1. What species conservation goals do we really want to achieve?
2. How much will meeting our goals cost – not just right now but over the next 25 years?
3. Can we achieve our goals in a less expensive way with less infrastructure and fewer up-front costs?
4. Is pest control over a larger area a viable alternative to a fenced sanctuary?
5. Is the best approach for our area a single fenced site or would the money be better spent on many smaller projects?”

Scofield RP, Cullen R 2012. Fenced sanctuaries need critical evaluation: a reply to Innes et al. (2012).
New Zealand Journal of Ecology 36: 239-242.