



Eradication of invasive species on islands as a tool for enhancing protected area values

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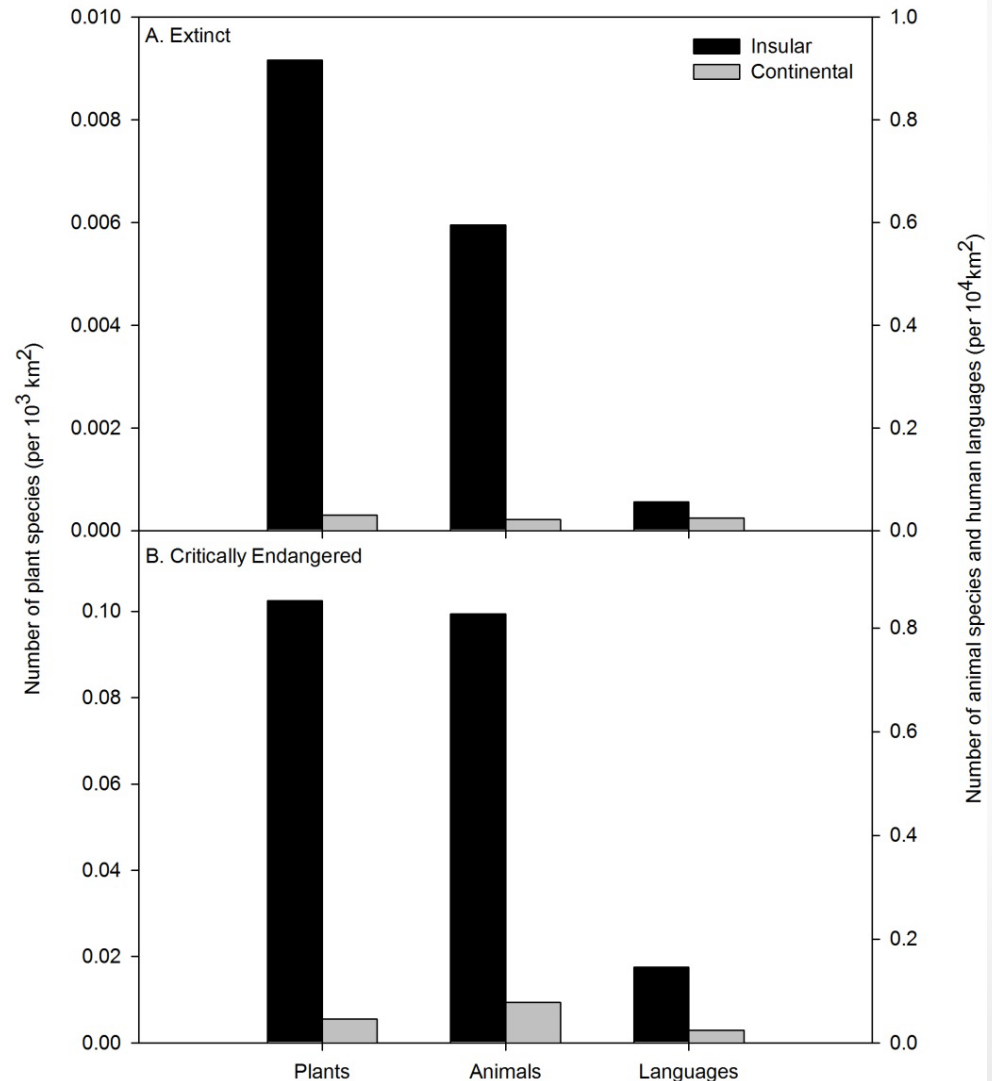
Today

1. Islands as a special conservation need
2. Eradication of invasive animals
3. Role in broader Island restoration
4. Examples of native biota response



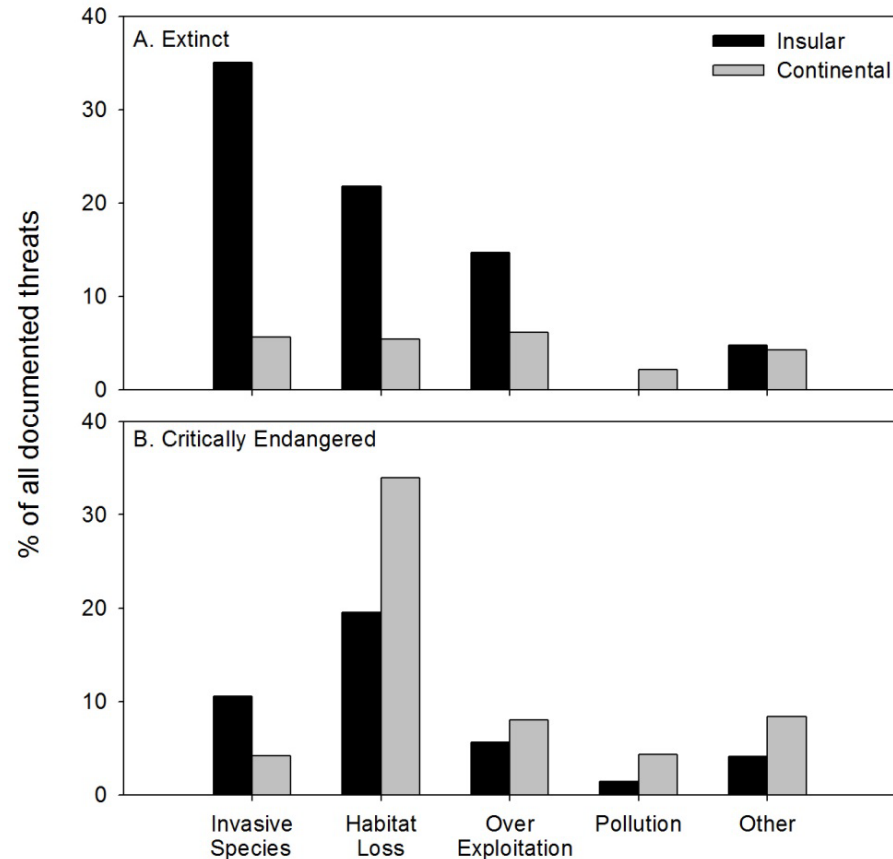
Islands as a special conservation need

- Less than 5% earth's land area
- 70% of known extinctions (Tershy et al. in press)
- 40% of today's IUCN CR species
 - Threatened Island Biodiversity database



Islands as a special conservation need

- Invasive Alien Species (IAS) cause island extinctions
- Remain a key threat to today's CR plants and animals



Eradications of IAS from islands

- Complete removal of an invasive species
 - Primarily mammals
- 1300+ attempts
 - 907 successful
 - 141 failed
- 840+ islands
- 60+ countries and territories



Global track record

- Database of Islands and Invasive Species Eradications

<http://diise.islandconservation.org>

- Global catalogue of all island IAS vertebrate eradication

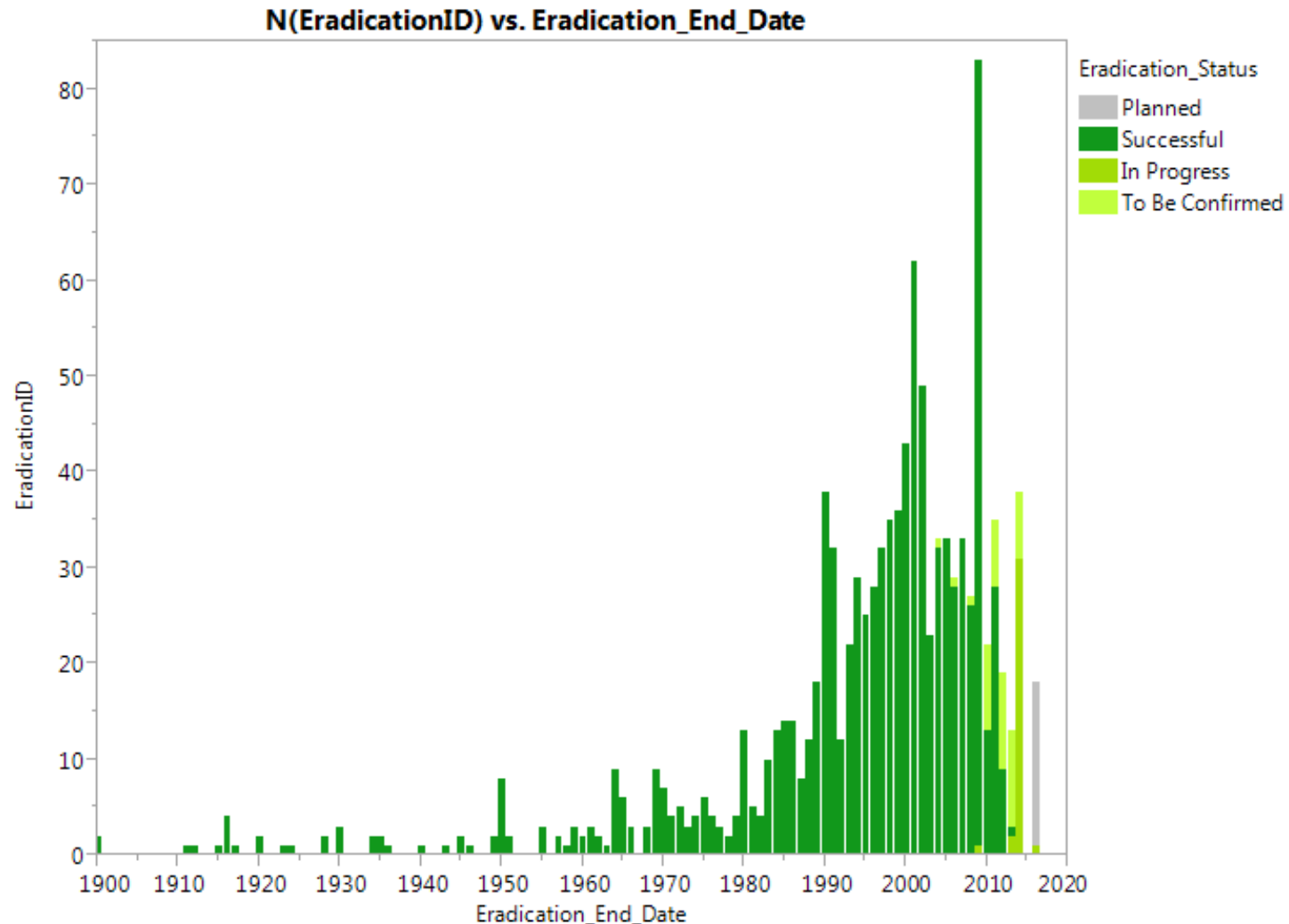
- Location, methods, status, contact, source, data quality



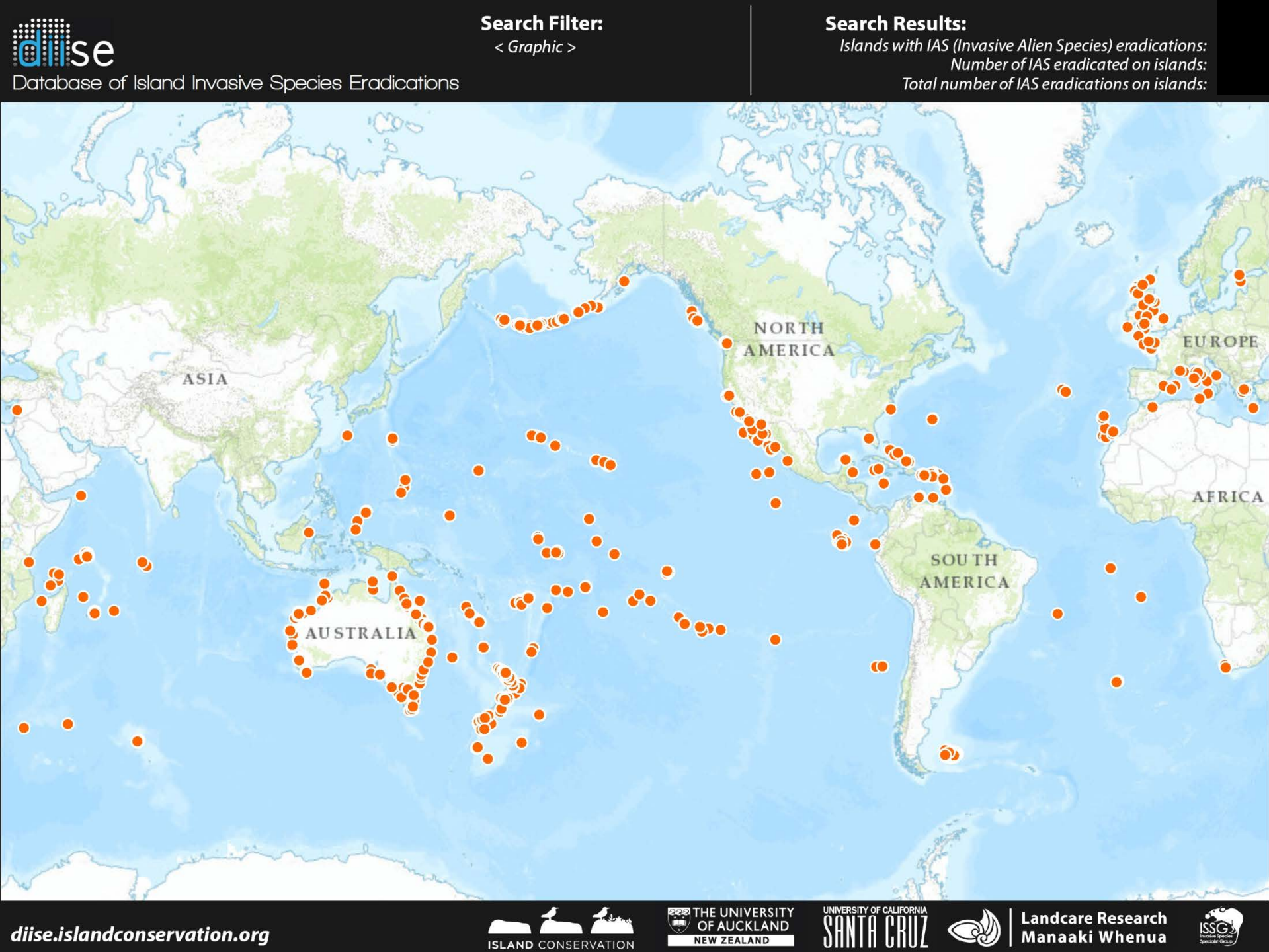
Landcare Research
Manaaki Whenua



IAS Eradication over time

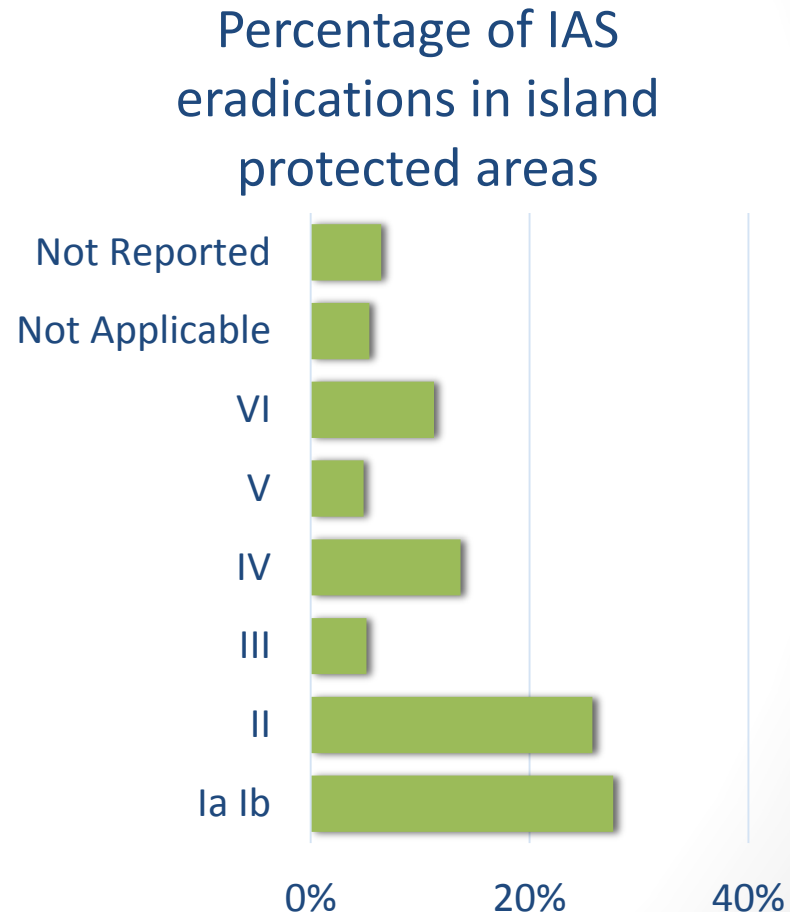


Database of Island Invasive Species Eradications



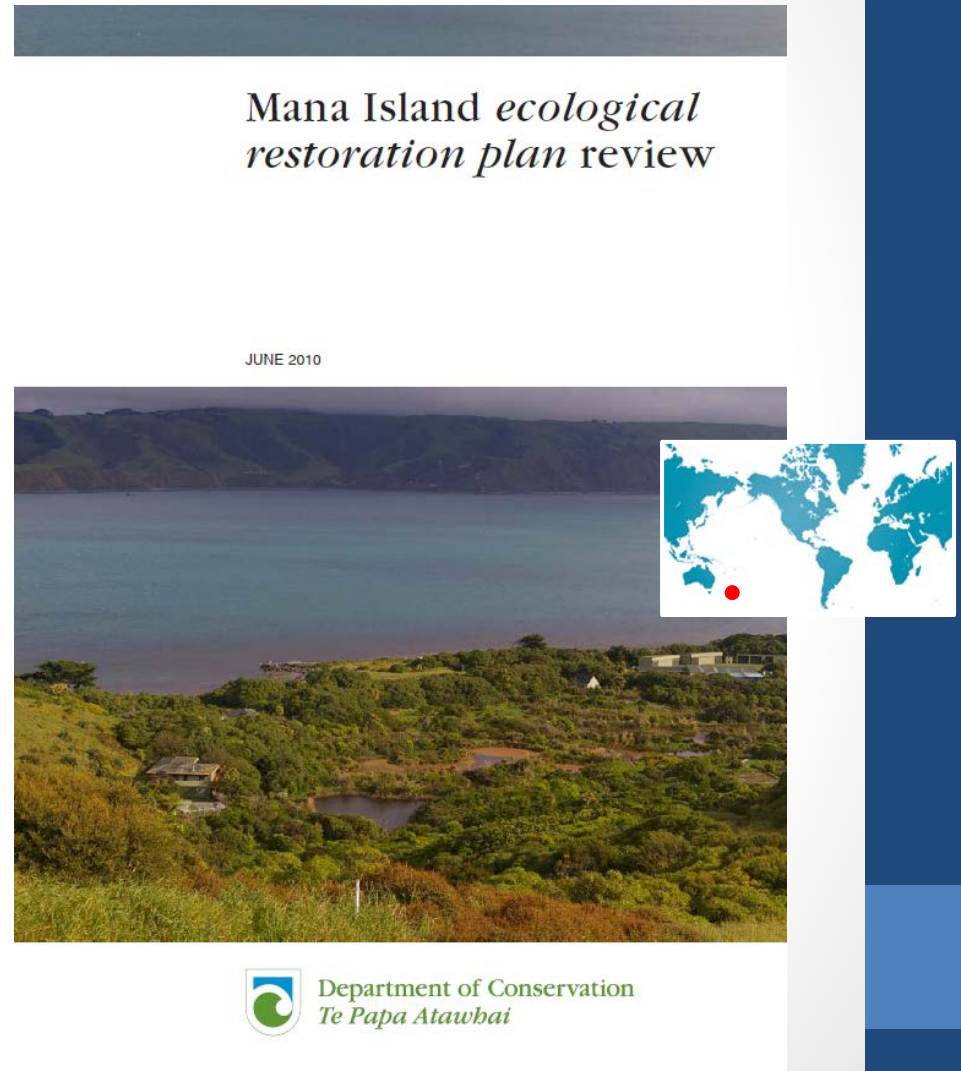
Eradication of invasive animals in protected areas

- 907 successful eradications on 670 islands
- 373 (55%) islands overlay with WDPA protected areas



Eradication and island broader restoration

- Eradication is a critical step towards island restoration goals by removing threat of invasives
- Achieving broader restoration goals can often require additional techniques
- (Mana Island Scientific Nature Reserve)



Eradication and island broader restoration

- Kaho`olawe, Hawaii, State Nature Reserve
- Ongoing habitat restoration, proposed eradication of cats and rodents, and species translocation
- Role in protecting species at risk from climate change impacts

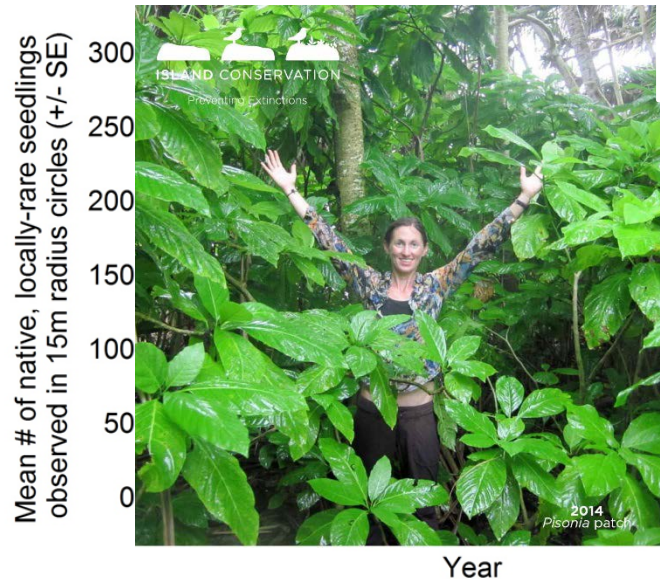


Palmyra Atoll, Line Islands

- National Wildlife Refuge, Rodents removed 2011
- 3 year post eradication:
 - increased seedling recruitment of
 - Native tree species
 - Coconut



Wolf et al. unpublished



Percent increase *Barringtonia asiatica* seedling recruitment

San Nicolas, Channel Islands

- Cats removed 2010, military but natural resources jointly managed with US FWS
- Island Night Lizard proposed for downlisting with removal of cats from San Nicolas, and goats on San Clemente, playing a key role.

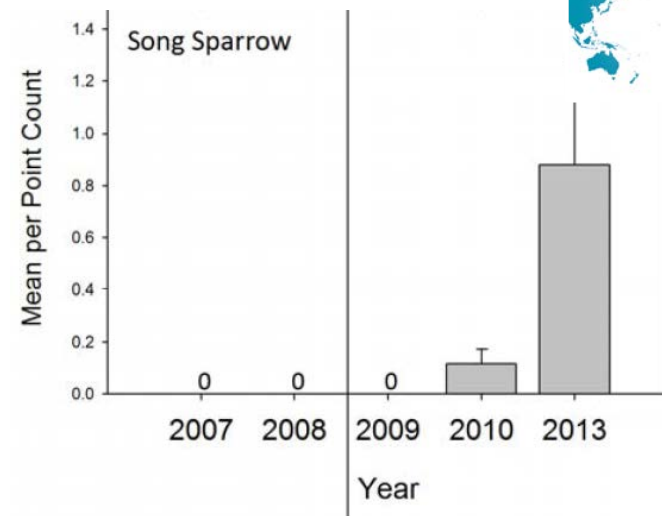


US FWS, 2013



Hawadax (Rat) Island, Alaska

- National Wildlife Refuge, Norway rats removed in 2008
- Monitoring of vegetation, inter-tidal and bird monitoring
- Short-term non-target impacts
- Medium-term, seabirds and landbirds recolonizing and increasing



Croll et al. in submission



The Nature Conservancy



ISLAND CONSERVATION
Preventing Extinctions

Anacapa Island, Channel Islands

- National Park, rats removed 2001-2002, Oil Spill mitigation money funded
- IUCN VU Scripps' Murrelet nest occupancy \uparrow 130%
- IUCN EN Ashy storm-petrel recorded for the first time



Image courtesy of Annie Schmitt

Whitworth et. al (2014), Newton et al.
in submission



Summary

- Islands represent
 - a special conservation need
 - unique conservation opportunity
- Eradication of invasive mammals
 - Important restoration tool
 - Support protected area values of biodiversity conservation



