

Conservation of lizards in NZ cities

From backyards to urban sanctuaries

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Native trees felled at 'vibrant' space to make way for new housing development.

Hanna McCallum · 10:53, Nov 19 2021



©/NS SKELTON/STUFF

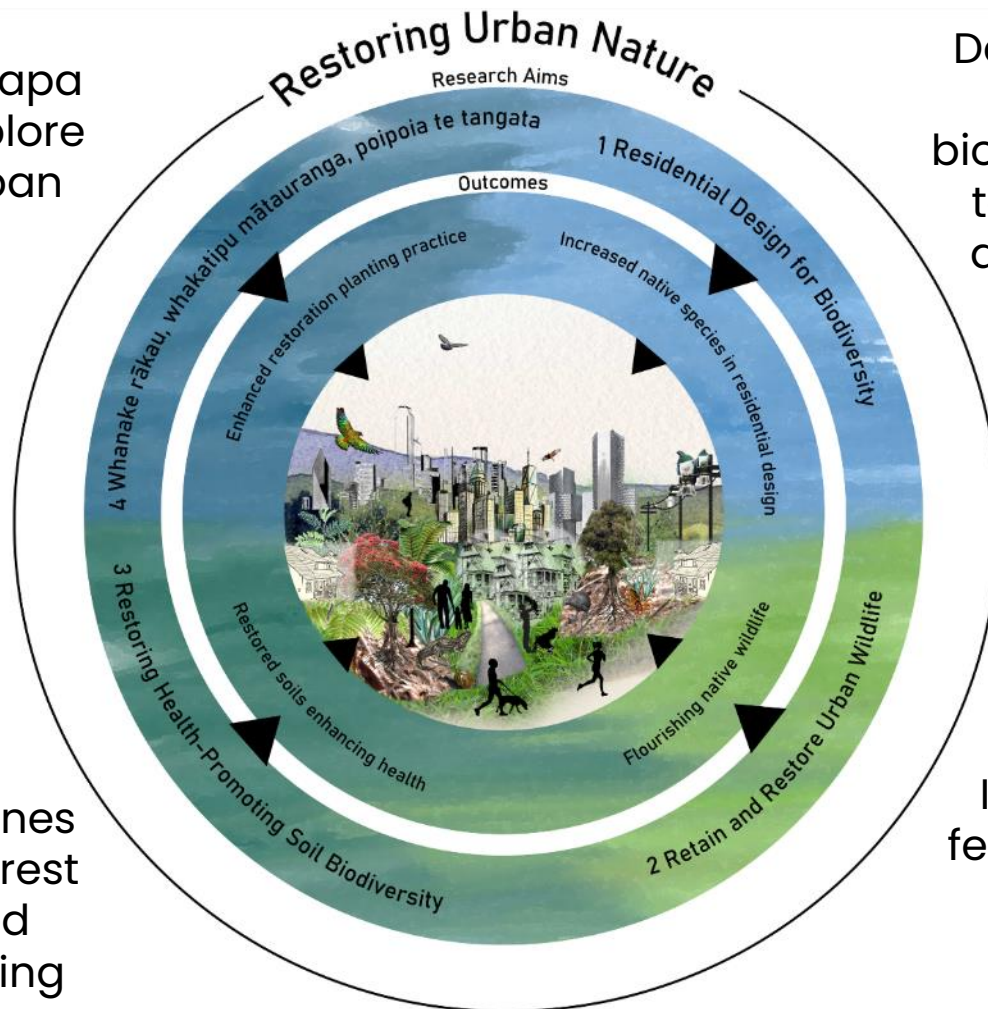
Work is under way to clear an area for a new development on the corner of Cambridge Terrace and Manchester Street.

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Developing a kaupapa Māori model to explore the benefits of urban forests



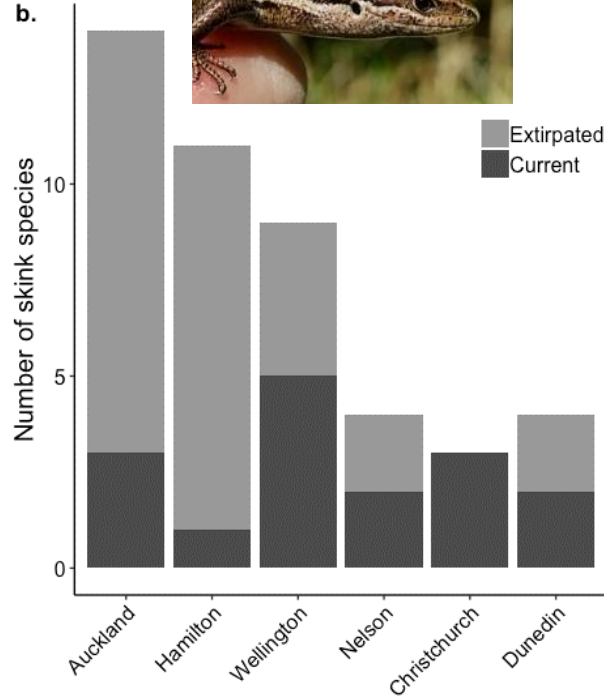
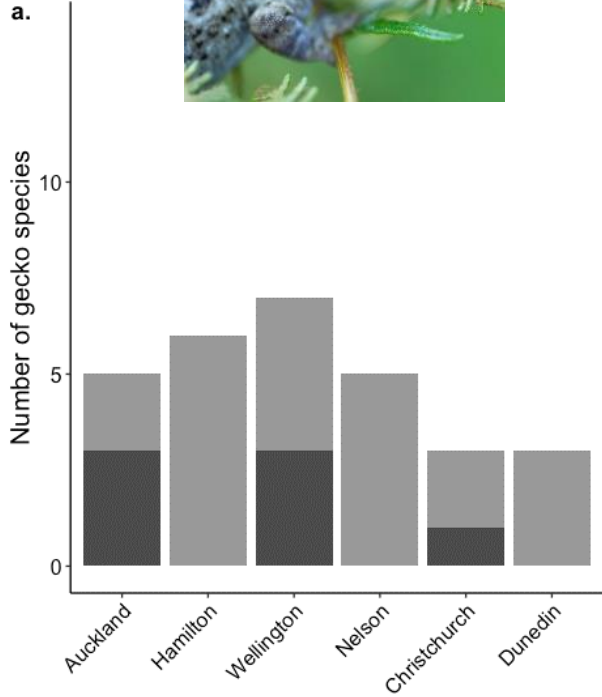
Developing means and goals for optimal biodiversity to be applied to urban greenspace, architecture and built infrastructure

Developing guidelines to restore urban forest soils for improved health and wellbeing

Investigating habitat features that contribute to retention and restoration of urban biodiversity



Despite these sightings, we lack knowledge of what species are present where in cities and how these are faring

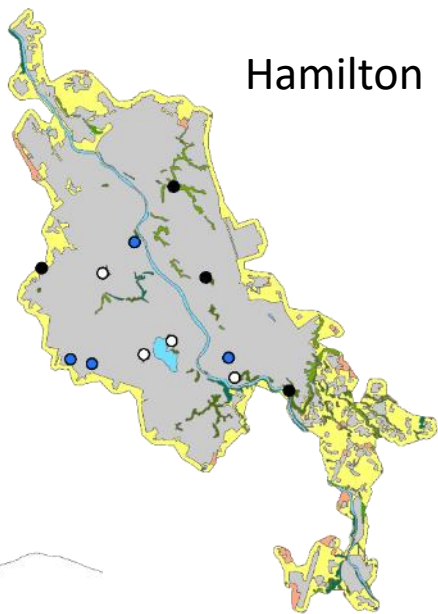


- Six studied cities have at least one lizard species
- All have lost some species- **60%** of the species historically present around cities have not been recorded in last 20 years
- The majority of species lost were local endemics

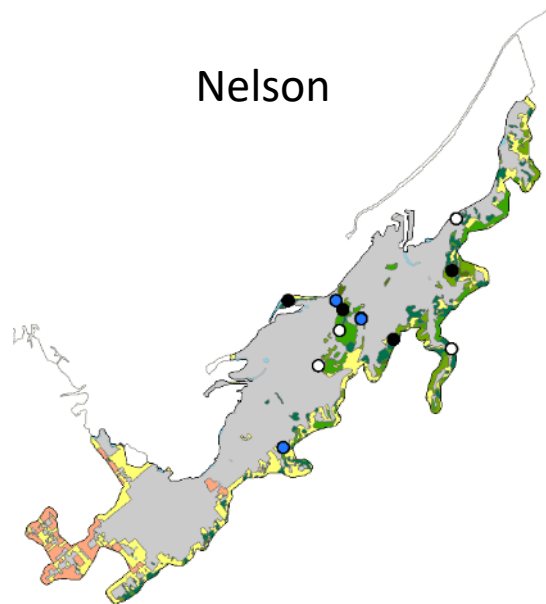
Very few surveys undertaken in cities

- Amenity area
- Backyard
- Bush reserve

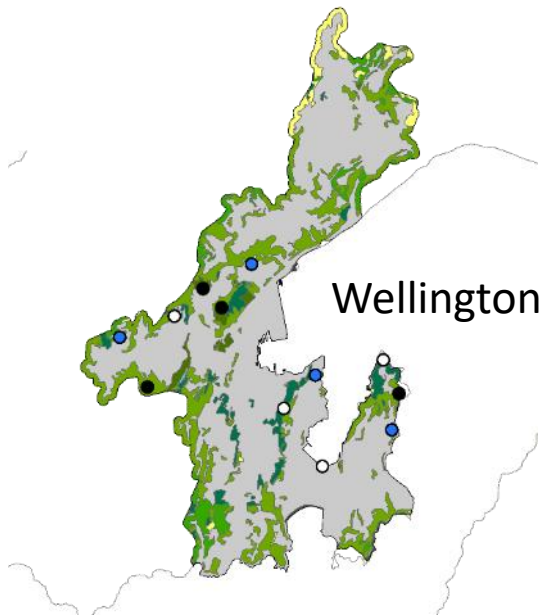
Hamilton



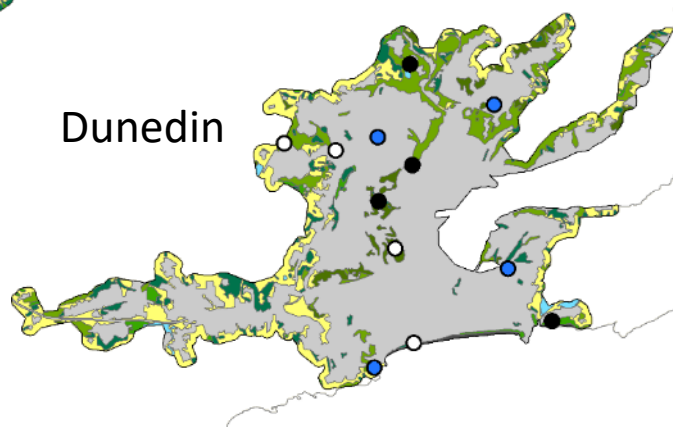
Nelson



Wellington



Dunedin



Bush reserves



Amenity spaces



Backyard example 1



Backyard example 2



Skink diversity

Hamilton: copper skink

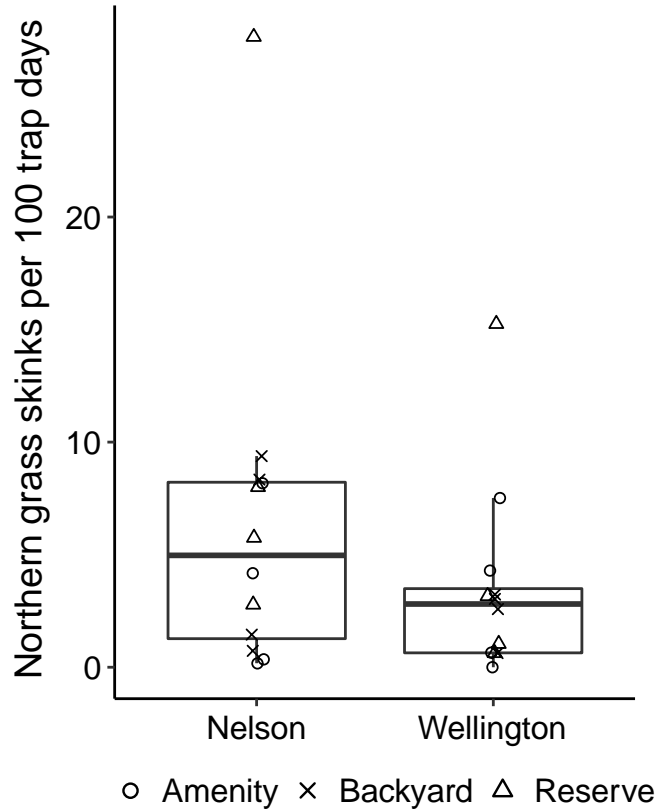
Wellington: northern grass, copper, ornate skinks

Nelson: northern grass skink

Dunedin: southern grass skink



Skink abundance: northern grass

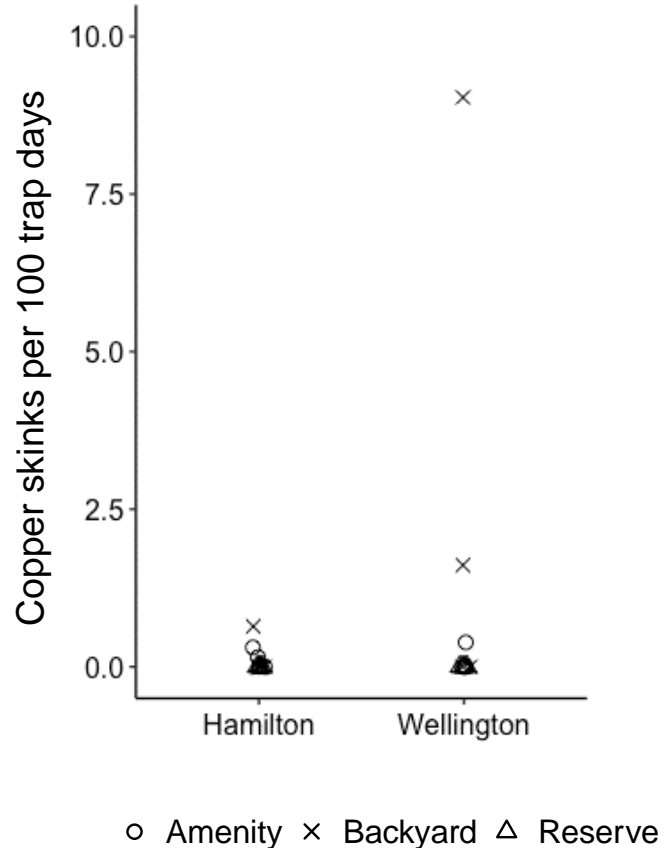


Across Nelson and Wellington, northern grass skinks were widespread

And reached high abundance at some reserve and amenity sites



Skink abundance: copper



Other species such as the copper skink and ornate skink were much more sparse and were mostly detected only in low numbers



Conclusions

Some skink species (especially grass skinks) that are resilient to urban challenges may be doing well in cities



For other species, the outlook is uncertain. Copper and ornate skinks are declining nationally and were detected in low numbers at few sites in Wellington and Hamilton

Retaining lizards in cities



3. Residential backyards



2. Urban reserves



1. Urban sanctuaries



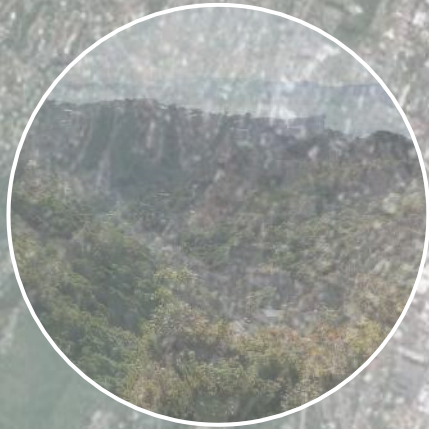
4. Urban infrastructure



3. Residential backyards



2. Urban reserves



1. Urban sanctuaries



4. Urban infrastructure

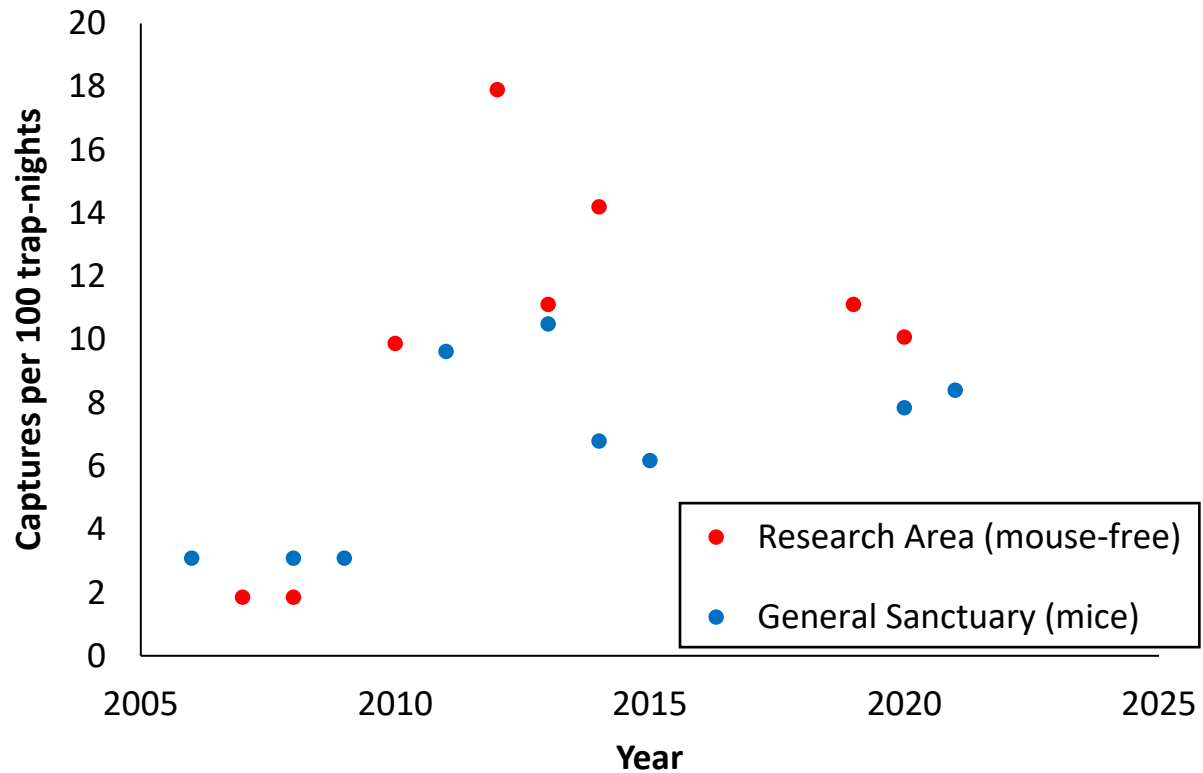


1. Urban sanctuaries

- High standard of predator control
- Long-term investment
- Support large populations
- Demonstrated recovery of some species (ornate skinks)



Ornate skinks



3. Residential backyards



2. Urban reserves



1. Urban sanctuaries



4. Urban infrastructure

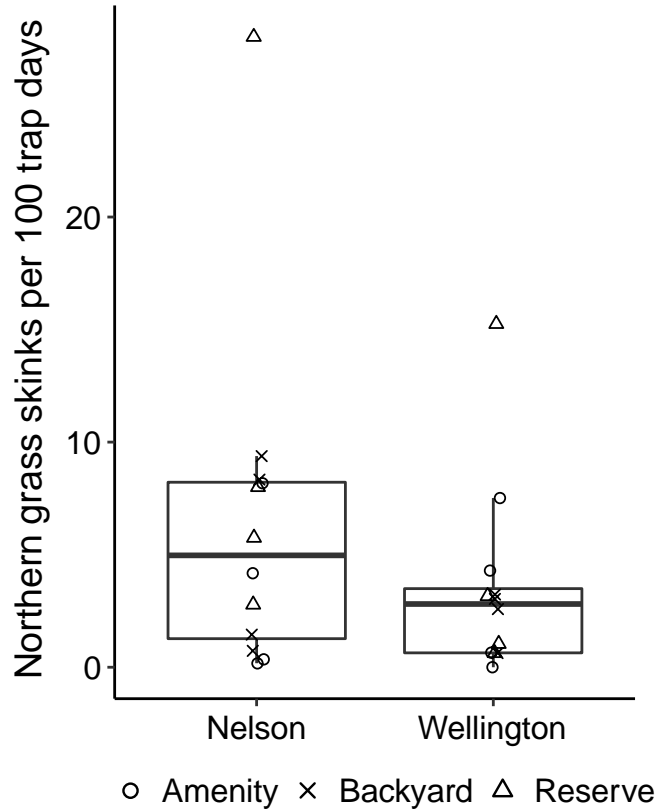


2. Urban parks and reserves

- Engaged community groups provide predator control and maintain habitat
- Commitment to long-term restoration goals
- Habitat can be of high value and can support large lizard populations



Urban lizard abundance

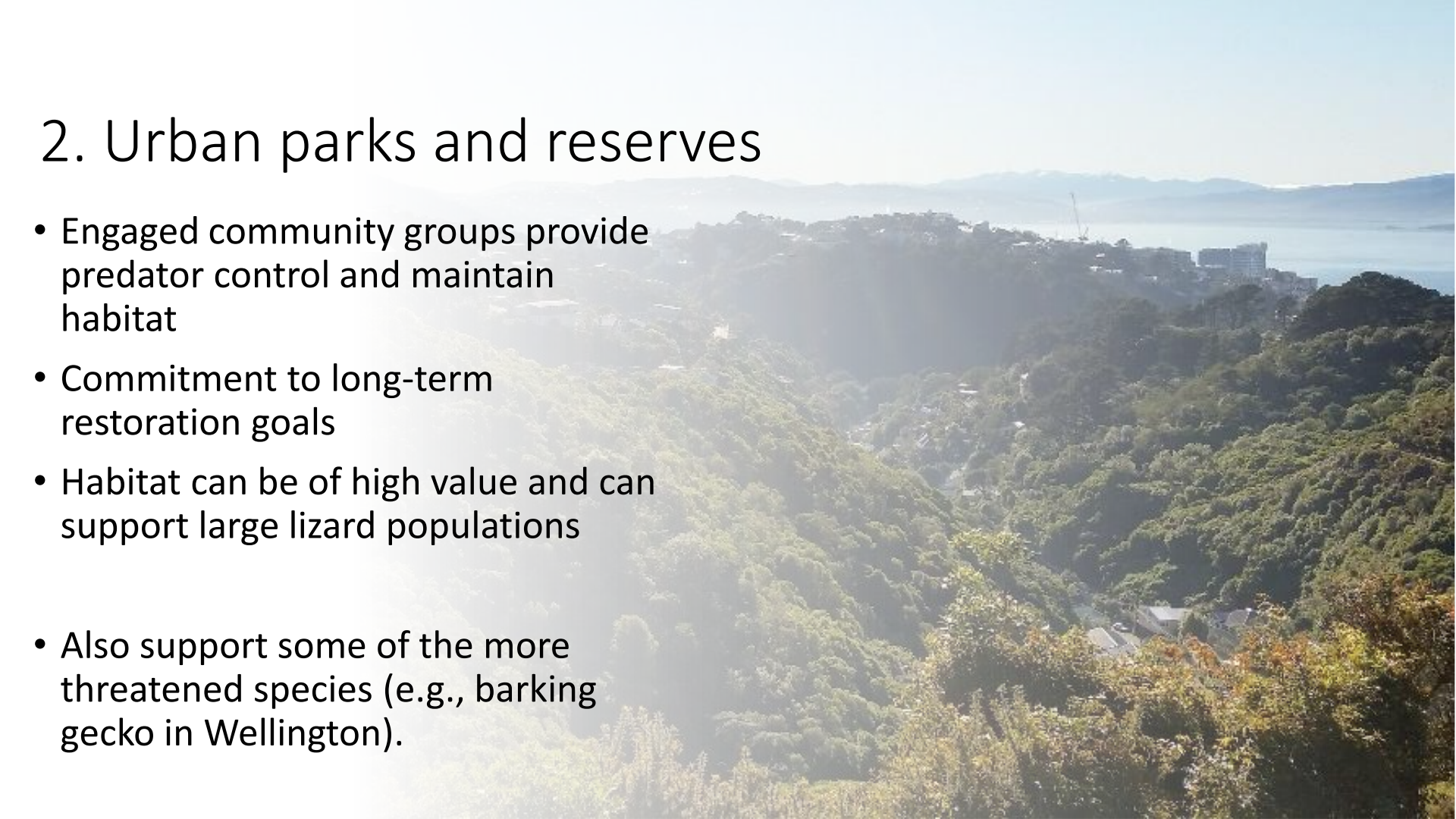


Across Nelson and Wellington, northern grass skinks were widespread

And reached high abundance at some reserve sites

2. Urban parks and reserves

- Engaged community groups provide predator control and maintain habitat
- Commitment to long-term restoration goals
- Habitat can be of high value and can support large lizard populations
- Also support some of the more threatened species (e.g., barking gecko in Wellington).



3. Residential backyards



2. Urban reserves



1. Urban sanctuaries

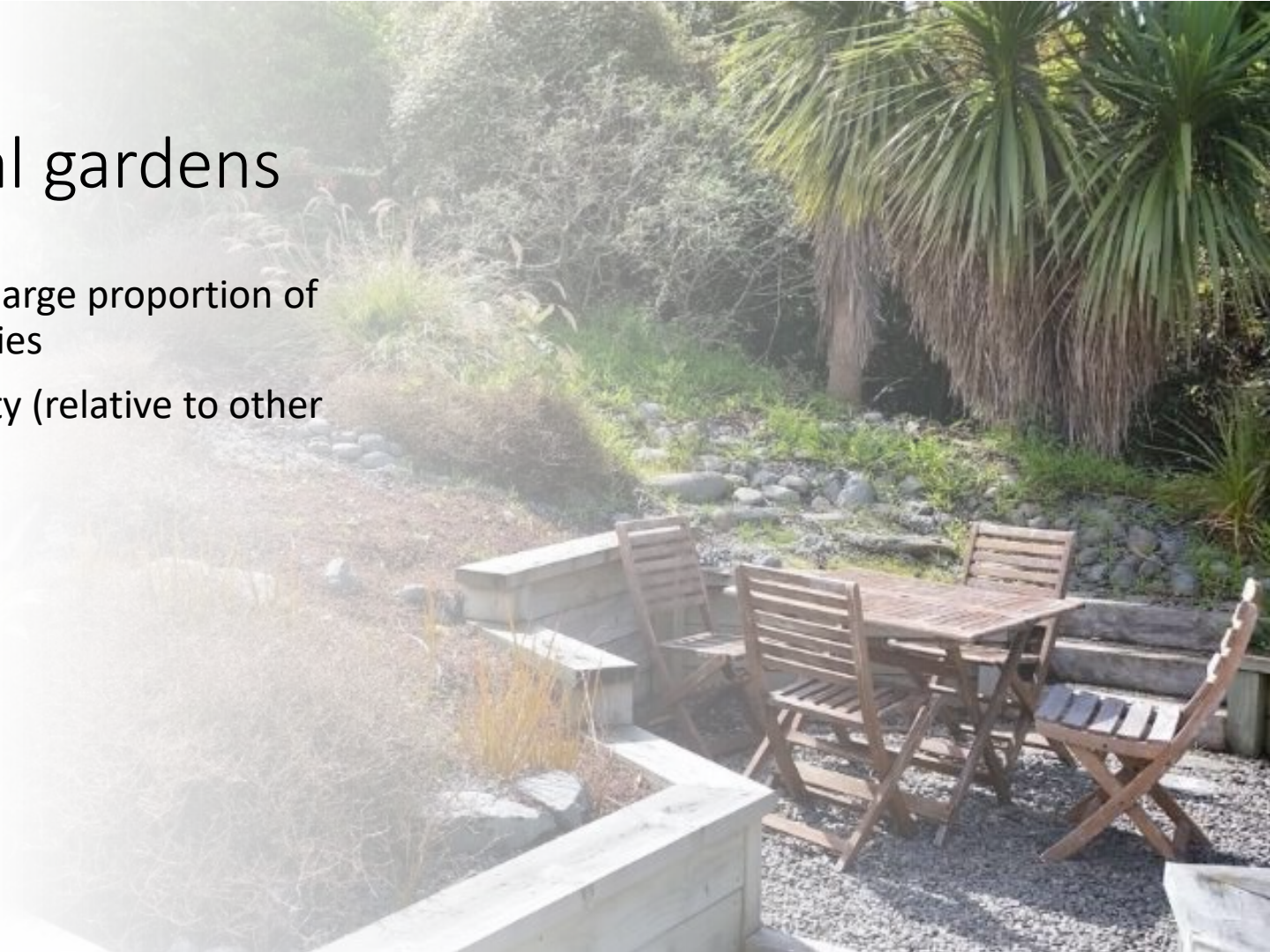


4. Urban infrastructure



3. Residential gardens

- Backyards make up large proportion of the land cover of cities
- High species diversity (relative to other urban sites)



Backyard lizard diversity

In Wellington, the following were present in backyards:

- northern grass skink
- copper skink
- ornate skink
- raukawa gecko

...and the largest number of copper skinks of any of the Wellington sites



3. Residential gardens

- Backyards make up large proportion of the land cover of cities
- High species diversity (relative to other urban sites)
- Opportunities:
 - Predator control (including cat containment)
 - Providing habitat (maintaining untidiness)
 - Detection of cryptic species (citizen science)



3. Residential backyards



2. Urban reserves



1. Urban sanctuaries



4. Urban infrastructure



4. Urban infrastructure plantings

- What: planted strips along roadsides, vegetation around the perimeter of sports fields
- Underestimated in terms of the value for lizards



4. Urban infrastructure plantings

- What: planted strips along roadsides, vegetation around the perimeter of sports fields
- Underestimated in terms of the value for lizards
- Opportunities:
 - Understand the values of habitat for lizards
 - Consider lizards in site maintenance
 - Better policies for mitigating effects on lizards during land use consenting



Cobham Drive: June 2017



Cobham Drive: September 2019



Cobham Drive: May 2021



Cobham Drive: March 2023



Cobham Drive: June 2017



398 northern
grass skinks



Current research: lizards and resource consenting

- Consideration of lizards during resource consenting is highly variable
- Consent planners tell me in most contexts they are unable to write conditions for lizards
- But lizards are protected under Wildlife Act (1953)
- Outcome is that effects on lizards are often not mitigated during development, or they are dealt with late in the process
- Usually involves mitigation translocation as opposed to avoidance which might have better outcomes
- Outcomes of mitigation translocations are highly uncertain

Lizards in path of Trans Rare lizards blow out budget for Gully motorway shifted Christchurch City Council \$15k home project

Michael Forbes · 21:02, Jul 14 2015



Two of the Transmission Gully geckos that have been moved in Waiheke.

About \$15,000 has been spent on work whose homes happened to be in the path of the Gully motorway.

Major earthworks are just months away on the 27-kilometre inland motorway between

Misad

Other
By Louis Day

8 Oct, 2020 09:25 AM · 3 mins to read

Lois Cai

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New Zealand has more than 110 species of lizard and none of them are found anywhere else in the world.
Photo / DOC

By Louis Day, Star News

An additional \$611,000 of ratepayer money had to be spent on a Christchurch City Council project after endangered lizards were discovered at a council work site.

Endangered lizards blow out budget for Wellington development



Thanks for listening

Questions?

