An assessment of the potential risk pathways of Rainbow Skinks & Argentine ants from Rodney district businesses to the islands of the Hauraki Gulf.

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ARGENTINE ANTS

Proficient foragers, large uni-colonies, outcompete native ants, predate nesting birds, native skinks & invertebrates.

Changes ecosystem dynamics, functioning and resource availability
Rainbow skinks

Prolific breeders, predate invertebrates, compete with native skinks and insectivorous birds.

Changes ecosystem dynamics, functioning and resource availability
ISLANDS OF THE Hauraki Gulf

- Protected marine reserve: 1.2 million hectares.
- Sanctuaries for Native flora & fauna.
Human mediated dispersal

- Increasing with more shipments of supplies to islands e.g. Great barrier.
- Species associated with anthropogenic disturbance are likely to be accidentally transported.
Aims

• To **identify businesses** that pose a **high risk** of transporting Rainbow skinks (*L.*delicata) and Argentine ants (*L.*humile) to the Islands of the Hauraki Gulf.

• To establish the **presence or absence** of Rainbow Skinks (*L.*delicata) and Argentine ants (*L.*humile) within high risk businesses in eastern Rodney.

• To raise **awareness of invasive species** to businesses that are associated with the transportation of goods to the offshore islands.
Location selection

Proximity to industrial centers

Proximity to Wharves/marinas

- Wellsford
  - Gulf harbour
- Matakana
- Waiti
- Warkworth
- Sandspit
- Silverdale
- Orewa
- Stillwater
- Whangaparaoa
- Snells beach
**Category Selection**

High-Very high risk  
(Hawkes bay)

- Nurseries  
- Building supplies  
- Construction  
- Contracting  
- Services

- Outdoors  
- Transport services  
- Used house parts  
- Vehicle repairs  
- Used car sales

**Final Categories**

- Nurseries  
- Building supplies  
- Construction  
- Contracting  
- Services  
- Outdoors  
- Transport services
Presence & absence

Hand searching

Habitat areas

- Paving stones
- Mulch, Soil & aggregate
- Sheet metals
- Ply wood & Timber crates
- Ceramics
- Artificial habitat
  (Discarded tubing & rotting wood)
RISK ASSESSMENT SURVEY

• Modified from a tool developed by Richard Toft (Entecol) and Alice McNatty (Hawkes bay)
• Designed to obtain a score which represents a businesses risk of spreading Argentine ants.

Site questions: Dwell time of product, Habitat suitability, Site hygiene, Ant control
Commodity questions: Packaging requirements, Product type & destination,

EXAMPLE:

<table>
<thead>
<tr>
<th></th>
<th>How much good ant/skink habitat is on the site? (S)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Almost entirely sealed with concrete/bitumen, no gardens or lawn</td>
<td>0.5</td>
</tr>
<tr>
<td>b</td>
<td>Mostly sealed with concrete/bitumen, but some small garden areas present (&lt;5%)</td>
<td>1</td>
</tr>
<tr>
<td>c</td>
<td>Substantially sealed, but gardens/ lawn/unsealed ground covering 5 –20%</td>
<td>1.5</td>
</tr>
<tr>
<td>d</td>
<td>Unsealed ground/ gardens/ lawn occupy &gt;20%, but &lt;50% of property</td>
<td>2</td>
</tr>
<tr>
<td>e</td>
<td>Unsealed earth/gardens/or lawn occupy 50% or more of property</td>
<td>2.5</td>
</tr>
</tbody>
</table>

• Each question was given a weighting which determines the level of risk in terms of spreading invasive species
Risk assessment scores

PRS = \[ \frac{S(\text{Total}) \times C(\text{Total}) \times 100}{S(\text{max}) \times C(\text{max})} \]

Absolute Risk Category

ARC = LOW: 0-24.99
MODERATE: 25-49.99
HIGH: 50-74.99
VERY HIGH: 75-100+
Presence/absence results

- Presence of *L. humile* and *L. delicata* in the Rodney district

- 77 Sites surveyed over a 6 weeks

- Ants in high risk commodities (Wharehine)

- Businesses with population of Rainbow skinks and/or Argentine ants

- 37% Ants & Skinks
- 63% Property Clear
Distribution results

Businesses supplying goods to the islands of the Hauraki Gulf.

- Pest free Islands: 19%
- Other Islands: 23%
- Mainland: 58%
• 58% of businesses are high to very high vectors
Very high risk business categories

- SERVICES: 8 businesses
- Nurseries: 3 businesses
- Contractors: 2 businesses
- Construction: 3 businesses
- Landscape suppliers: 2 businesses
PRS of businesses with a presence of species

- Low: 0-24.99
- Moderate: 25-49.99
- High: 50-74.99
- Very High: 75-100+

Businesses with Property Risk Score:
- ITM
- Skyworks
- KB Contractors
- Mason bins
- Herman Pacific Ltd.
- Pole Yard
- Burning's trade
- Downer Walkworth
- Place makers
- Tukers orchids
- Middle earth tiles
- Hire works
- Wharehine
- Mason Contractors
- HYDNS
- Te hanan nursery
- Tumble weed coastal plants
- Liberty Native
- Tehapana Contractors
- Gulf Harbour yacht club
- Matakana palms
- Stillwater holiday park
- Hilltop landscaping
- Rhodes
The diagram illustrates the Property Risk Score (PRS) of businesses with a presence of species, particularly focusing on "L. delicata" and "L. humile." The species presence is categorized into four risk levels: LOW (0-24.99), MODERATE (25-49.99), HIGH (50-74.99), and VERY HIGH (75-100+).

Businesses are plotted along the x-axis, with the y-axis representing the PRS. The key to the colors indicates the species presence:
- Red: "L. delicata"
- Blue: "L. humile"
- Yellow: "L. delicata" & "L. humile"

The businesses listed include Skyworks, KB Contractors, Mason bins, Herman Pacific Ltd., Mason Contractors, HYNDS, Te hauan nursery, Tukers orchids, and others. The graph visualizes the distribution of species presence across different businesses, with a clear distinction between presence levels.
Conclusions

- The PRS’s conclude that services are the highest risk business category.

- The presence absence survey concludes that rainbow skinks are more widespread than originally predicted, and a low presence of ants were found over the eastern Rodney district (6 business’s).

- The PRS’s combined with the presence/absence data indicates an incursion of Rainbow skinks to The islands is highly likely.

- An increase in product surveillance, site hygiene and ant control will reduce the risk of an incursion of both species.

- Ant colonies were hard to detect, PRS covers businesses where presence may have been missed (Services).
Recommendations

- Monitoring of businesses for presence of species and potential spread at two year intervals.

- Education on invasive species management to high risk businesses is advised.

- Survey the islands for the presence of rainbow skinks and argentine ants.

- Potential development of pest-free warrants for businesses.

- Expand the risk assessment survey to include all regions of the Auckland area.
Protect, sustain
Treasure
Acknowledgements

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References


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