



Kauri-ora Programme in Tāmaki Makaurau

National Pest Management Plan—*Phytophthora
agathidicida*



Kauri– *Agathis australis*



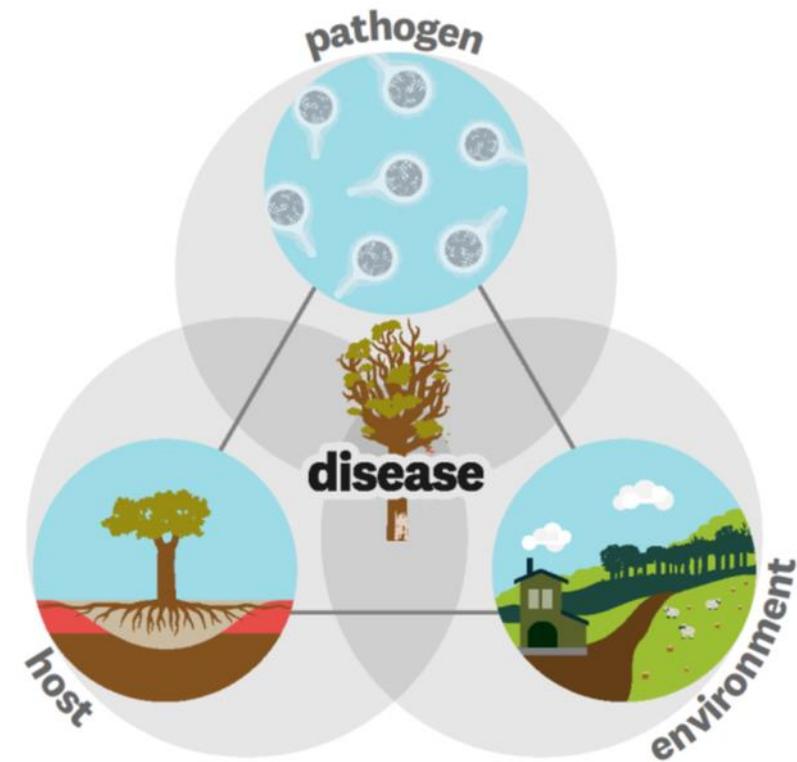
Biologically Extreme



Culturally significant

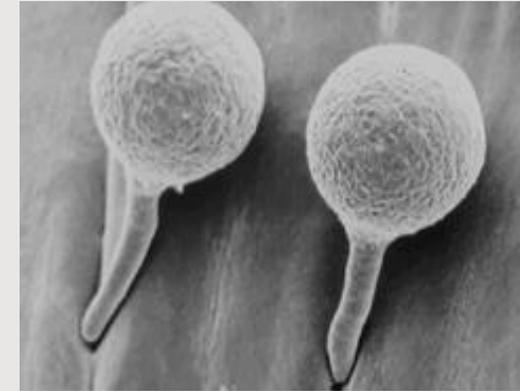
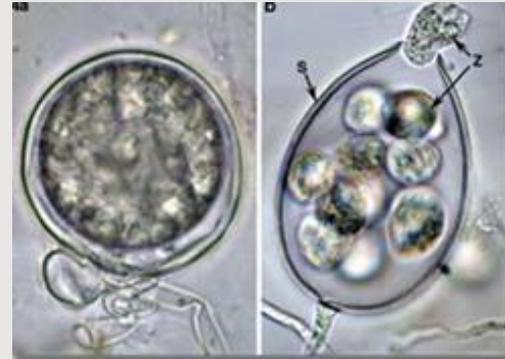


Threatened species that remains under threat



What is Kauri Dieback and why is it such an issue?

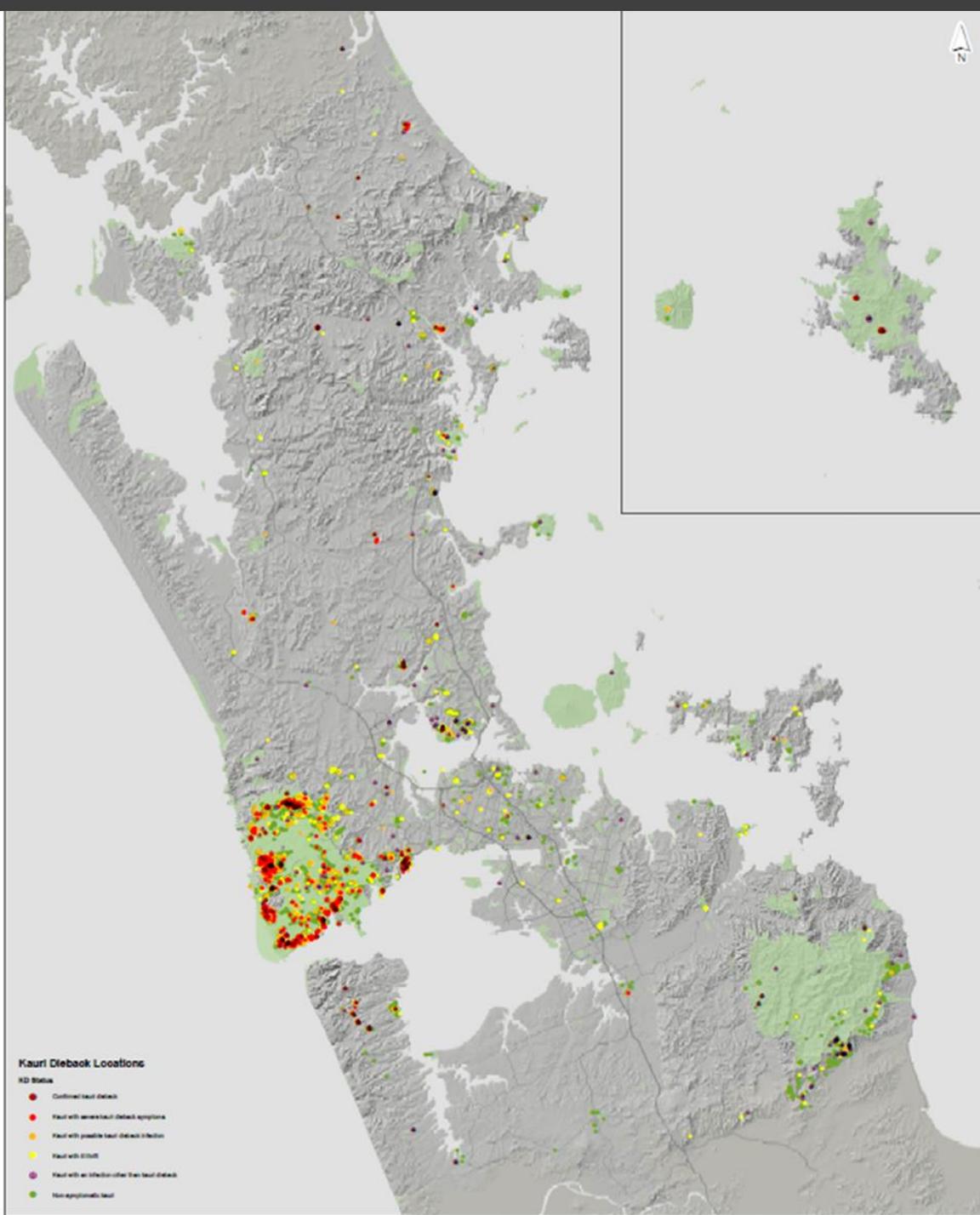
- A microscopic organism – *P. agathidicida* - that destroys kauri feeding roots, just like other phytophthora affect other plants
- It is terminal to kauri – there is currently no cure
- Dormant spores transported via soil and water
- Human activities are a key cause of spread



Kauri Dieback Locations

KD Status

-  Confirmed kauri dieback
-  Kauri with severe kauri dieback symptoms
-  Kauri with possible kauri dieback infection
-  Kauri with ill thrift
-  Kauri with an infection other than kauri dieback
-  Non-symptomatic kauri



Kauri
Dieback
Status:
Public
Land

Management Interventions: National Level



Biosecurity (National PA Pest Management Plan) Order 2022

Cindy Kiro, Governor-General

Order in Council

At Wellington this 4th day of July 2022

Present:
Her Excellency the Governor-General in Council



National Pest Management Plan: P.A.



CONSULTATION ROUND THREE

The pest management plan includes a set of proposed rules that could affect the way you access kauri forests, or require you to carry out actions to protect kauri if you have kauri forest on your land.

We wanted your views on how workable you think our proposals are, and the impacts they might have on you and your community, iwi, business or group. We wanted to know if there are any major issues you believe we have missed, that could significantly affect our proposals. And we'd like your views on the best agency model to manage the protection of kauri in the future.

Following this consultation round we will make final recommendations to ministers.

Consultation ran from 18 February to 18 March 2019. We also ran a series of hui and community meetings in the kaurilands in early March.

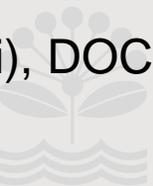


ROUND THREE KEY DOCUMENTS

 Consultation Overview Booklet - outlines the key points of the plan and the agency options	2MB
 The Refreshed Strategy for the Kauri Dieback Programme	248KB
 National Pest Management Plan Proposal	1MB
 Impact Analysis - an overview of the potential impacts the proposed rules might have on you	691KB
 Round Three Consultation Hui Presentation	1MB
 Round Three Feedback Form - REMEMBER: Download and save file to your computer before you begin your submission	1MB



- One of only a handful of NPMPs
- First of its kind: not driven by protection of industry but by conservation of a threatened species
- NPMP launched and operative as of 2nd August 2022
- Will be implemented by MPI (Tiakina Kauri), DOC, councils and mana whenua



Benefits of a national approach

- Currently different regions in 'kauri lands' have different rules and aren't resourced consistently
- A national plan should provide more consistency in how rules apply especially
- Should help make regional programmes more effective
- Also applies across the whole country e.g. for nurseries growing kauri outside regions with natural kauri



National Pest Management Plan Rules

1. Obligation to report: An occupier of land who recognises that a kauri on the land is exhibiting any symptoms of PA must, as soon as is reasonably practicable, report the symptoms and the location of the kauri to the management agency, an inspector, or an authorised person.
2. Provision of information to the management agency to help it manage kauri dieback
3. Restriction on the movement of kauri: A person who produces or propagates a kauri must not allow the kauri to be moved unless they have, and operate in accordance with, a production plan (e.g. NZPPI Plant Pass Scheme)
4. PA risk management plan: An occupier of land must have, and operate in accordance with, an approved PA risk management plan if a management agency, an inspector, or an authorised person gives the occupier written notice that the land is at risk of PA.
5. Earthworks PA risk management plan: This rule applies to an occupier of land that includes a kauri hygiene zone. The occupier must not undertake earthworks in a kauri hygiene zone unless they have, and operate in accordance with, an earthworks risk management plan that is approved for that land by the management agency, an inspector, or an authorised person

(delayed until 2023)

National Pest Management Plan Rules ctd

6. Stock exclusion notice: An owner of a grazing animal must ensure that the animal does not enter a kauri forest during a specified exclusion period if a management agency, an inspector, or an authorised person gives the occupier written notice
7. Restriction on release of animals: A person must not release an animal into—
 - (a) a kauri forest; or
 - (b) an area from which the animal could reasonably be expected to enter a kauri forest.
8. Obligation to clean items before entering or exiting kauri forest
9. Obligations to use cleaning stations
10. Open tracks and roads in a kauri forest:
 - (a) applies to an owner of land in a kauri forest if a track or road passes through that land; but
 - (b) does not apply in respect of a track of which the owner is unaware or not intended for public use.

Implementing the NPMP

- Most of the rules are now in effect (except the earthworks one)
- But MPI are still pulling together the operational plan for this year
- Further work will be required to develop all the criteria for how the rules are used
- The NPMP isn't only rules – it comes with funding for surveillance, awareness raising and so on

Management Interventions: Regional Level

Auckland Council Te Kaunihera o Tāmaki Makaurau		AUCKLAND UNITARY PLAN OPERATIVE IN PART 15 NOVEMBER 2016	
Auckland Unitary Plan Operative in part	Previous versions of the plan		
Maps			
E3 Lakes, rivers, streams and wetlands			PDF (200KB)
E4 Other discharges of contaminants			PDF (210KB)
E5 On-site and small scale wastewater treatment and disposal			PDF (504KB)
E6 Wastewater network management			PDF (110KB)
E7 Taking, using, damming and diversion of water and drilling			PDF (200KB)
E8 Stormwater - Discharge and diversion			PDF (213KB)
E9 Stormwater quality - High contaminant generating car parks and high use roads			PDF (91KB)
E10 Stormwater management area - Flow 1 and Flow 2			PDF (101KB)
E11 Land disturbance - Regional			PDF (174KB)
E12 Land disturbance - District			PDF (453KB)
E13 Cleanfills, managed fills and landfills			PDF (95KB)
E14 Air quality			PDF (415KB)

Mahere ā-Rohe Whakahaere Kaupapa
Koiora Orotā mō Tāmaki Makaurau
**Auckland Regional Pest
Management Plan**
2020 - 2030



Find out more: phone 09 301 0101
or visit aucklandcouncil.govt.nz

Auckland Council
Te Kaunihera o Tāmaki Makaurau

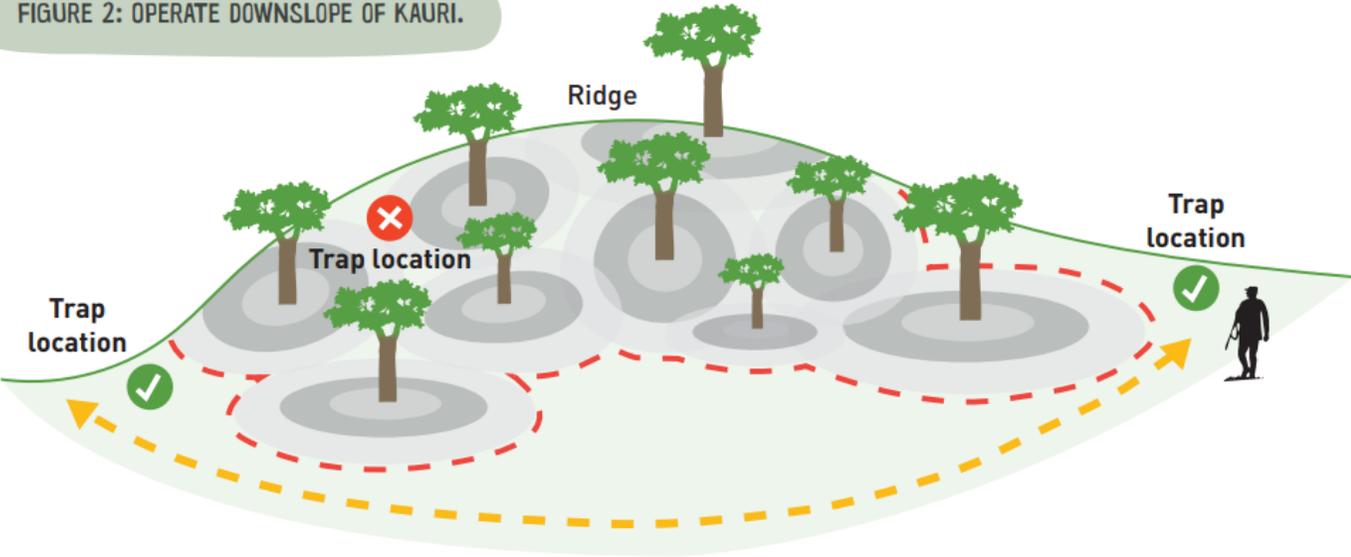
Principles of hygiene

1. Avoid Kauri Forests
2. If in Kauri Forests, avoid kauri (isolate and operate downslope of kauri)
3. Avoid known infected sites

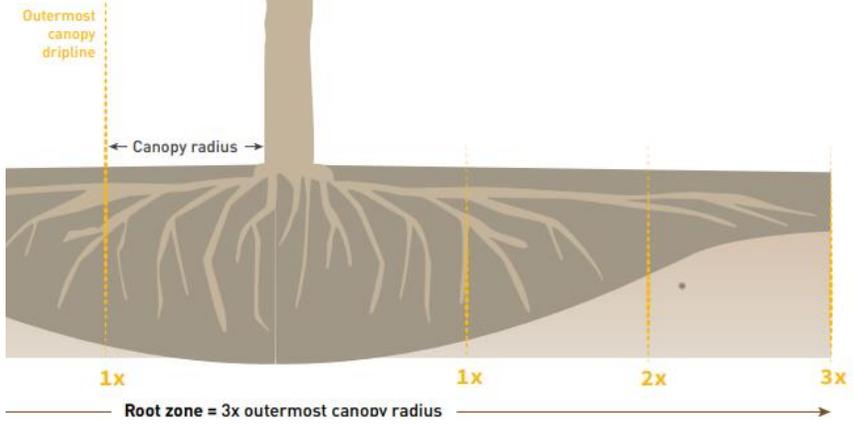


FIGURE 1: KAURI ROOT ZONE AND 3X DRIP CANOPY

FIGURE 2: OPERATE DOWNSLOPE OF KAURI.



--- Kauri hygiene area --- Recommended path if traversing



Principles of hygiene

4. Keep away from kauri in wet conditions (stop work over wet months)
5. Eliminate movement of dirt (arrive clean, leave clean- avoid materials coming into contact with ground, have dedicated machinery)
6. Remove all dirt then disinfect at cleaning stations. Or heat treat at 50 degrees Celsius for 24 hours



Questions from the Forestry Industry:

- **How are you managing intersect between forestry operations and regional parks like Hunua?**
 - Controlled Area Notice excludes the exotic forestry area
 - However there are controls when moving between the park and forestry areas
 - Council has dedicated vehicles and equipment based at Hunua
 - Have installed vehicle hygiene stations at Hunua and Waharau depots for staff and contractors

Questions from the Forestry Industry:

Do you wash down vehicles before and after operating in a kauri area? Or does it depend on risk / a risk assessment?

- Yes, wash in, wash out.
- We can't be sure that the pathogen isn't present, so always need to clean vehicles
- Also aim to schedule work outside of wet months and sequence work in healthy catchments first

Questions from the Forestry Industry:

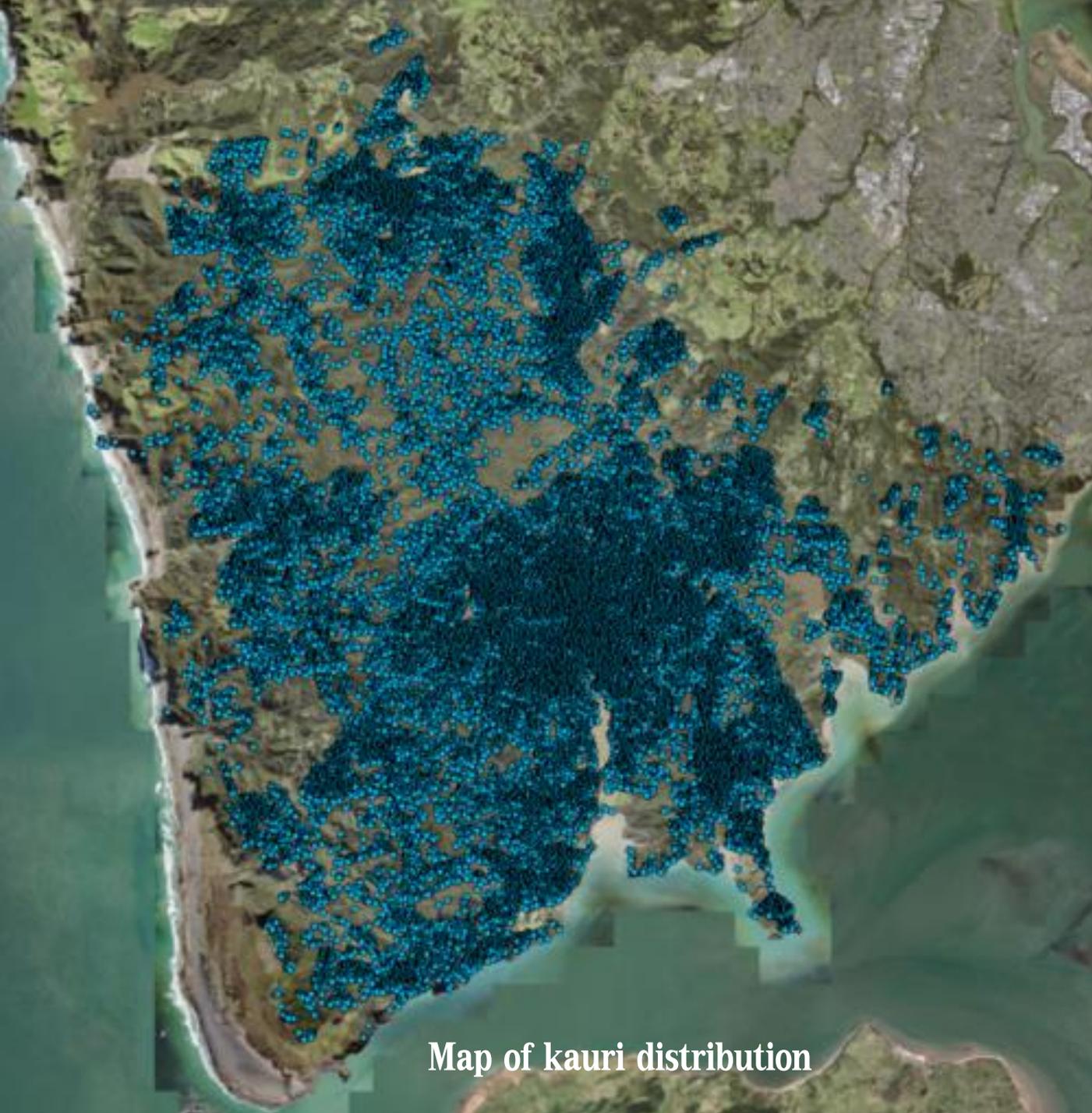
How actively are the existing guidelines followed and how do you anticipate things changing now that the NPMP is live?

- Compliance is generally good
- Our SOPs are generally followed

- Our programme in Auckland already aligns reasonably well
- Will be increased focus on nurseries and Plant Pass
- Considering how we will use “PA Risk Management Plans” and earthworks plans...

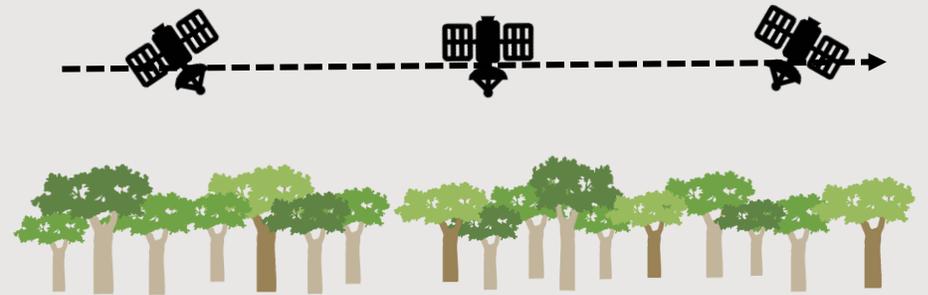
An aerial photograph of a dense, vibrant green forest. A winding river or lake, with a blue-green hue, meanders through the landscape, creating several small islands and peninsulas. The water's surface is calm, reflecting the surrounding greenery. The forest is thick and appears to be a tropical or subtropical environment. The lighting is bright, suggesting a sunny day, with some shadows cast by the trees.

Questions?



Map of kauri distribution

2021 Waitākere Ranges Kauri Health Monitoring



Focus on **kauri population health**

We used **remote sensing** to detect host trees

Our sample frame was $N=68,420$ kauri within the park extent

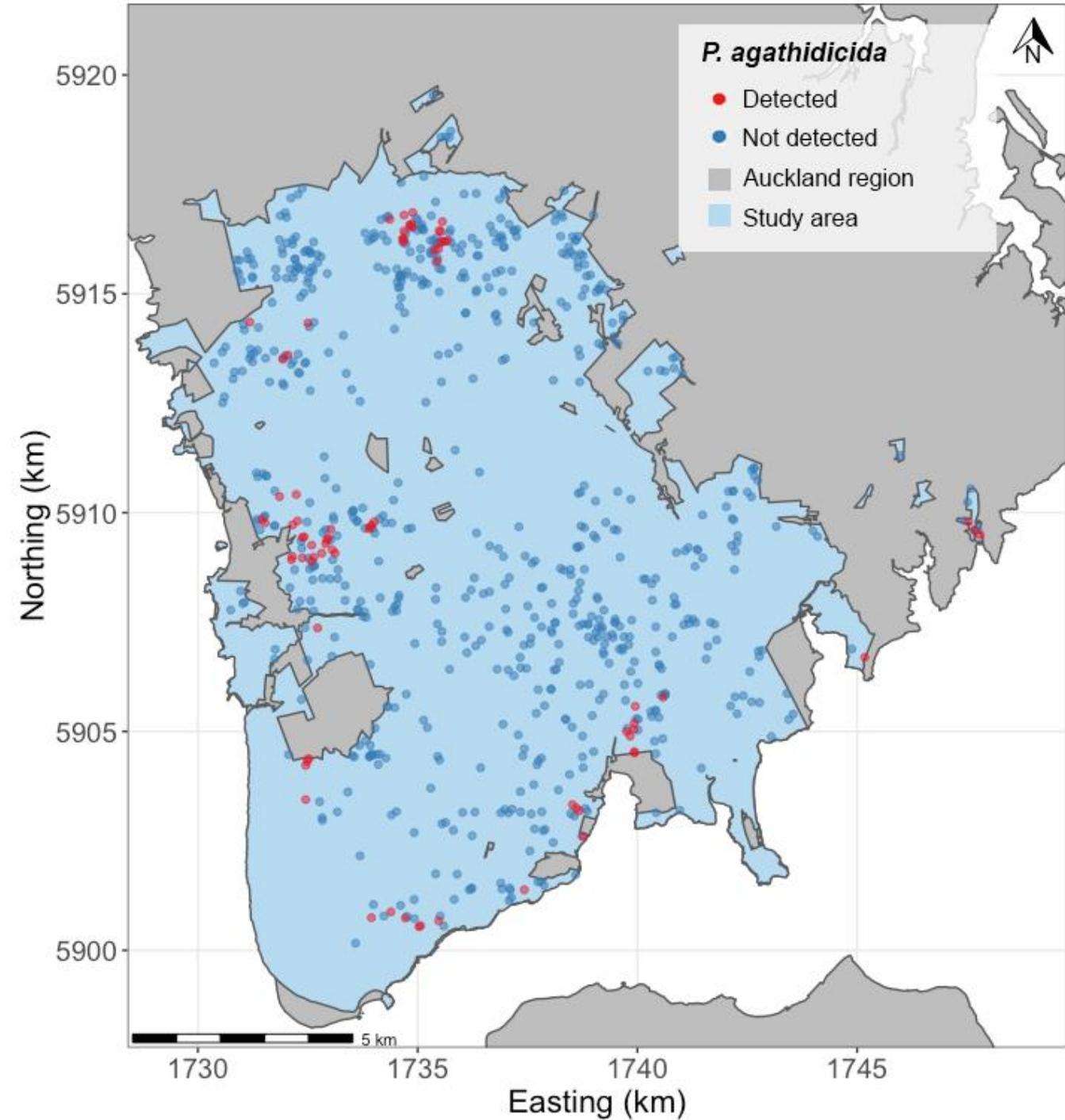


Distribution of pathogen causing Kauri Dieback Disease

Horse has not bolted- management interventions are needed to prevent spread of infectious organism

2021/2022 Waitakere Ranges Kauri Health Survey

- **Baseline prevalence of *P. agathidicida*: 10% of soil samples**
- **Spatial distribution of *P. agathidicida* was in localised areas around periphery of the Park**
- **Consistent with behaviour of slow-moving invasive soil-borne pathogen**

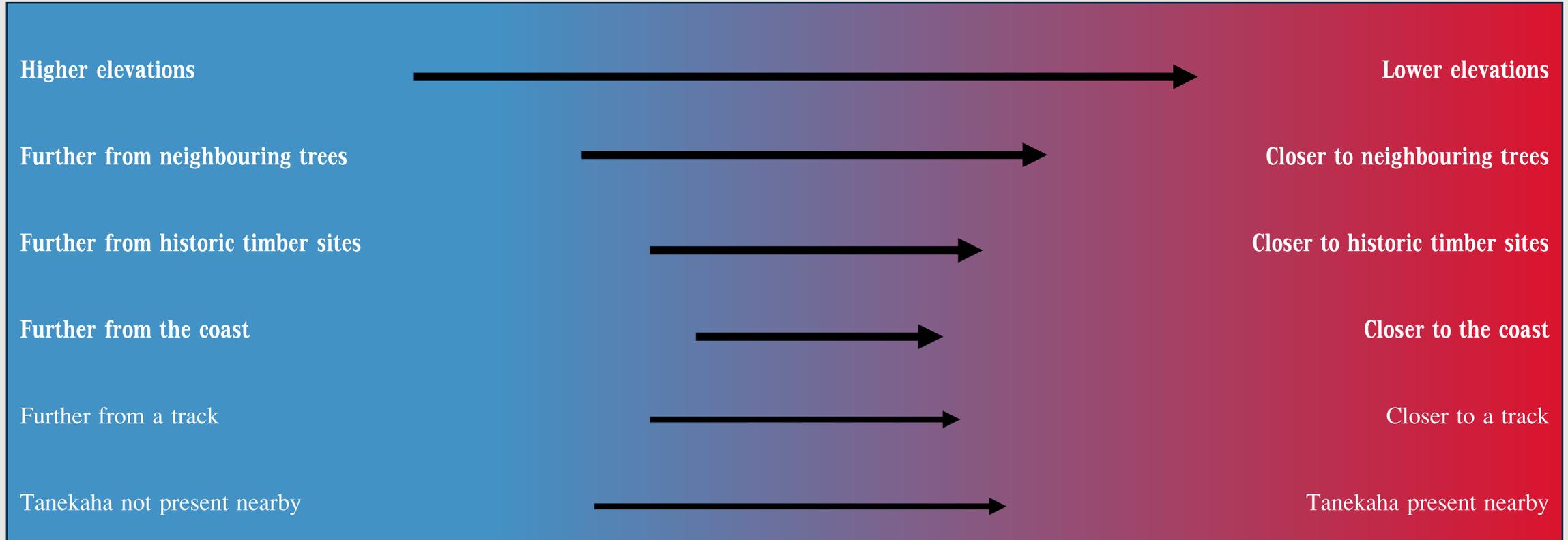


Disturbance is a key risk factor–pathogen

P. agathidicida spatial model-Waitakere Ranges Kauri Health Study 2021/2022

Lower pathogen prevalence

Higher pathogen prevalence

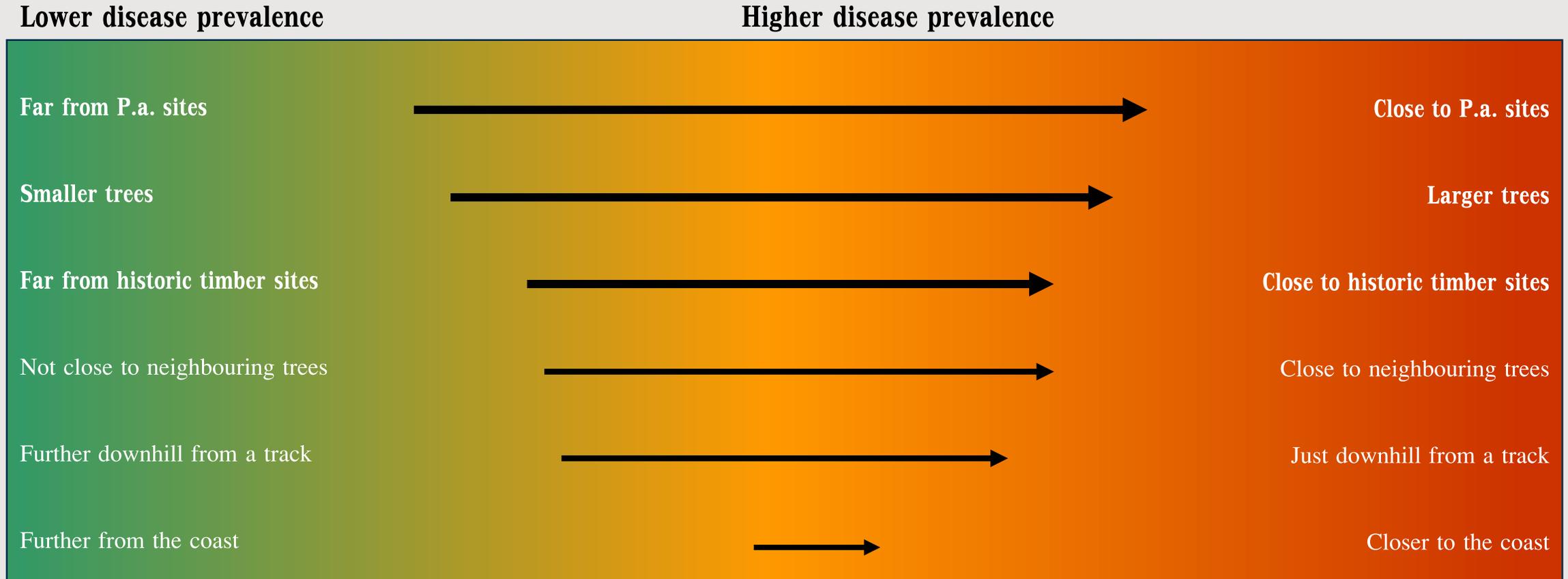


Hypothesis generation: why are these factors associated with pathogen presence?



Disturbance is a key risk factor–disease expression

Symptomatic spatial model-Waitakere Ranges Kauri Health Study 2021/2022



Hypothesis generation: why are these factors associated with disease?

