



PROTECT OUR KAURI

Kauri dieback disease is killing kauri trees.
It spreads via soil movement. Act now to stop its spread.

ALWAYS

- > Keep to the defined tracks
- > Clean your footwear before and after leaving kauri forest areas
- > Stay away from kauri tree roots

Report sightings of diseased kauri to the Kauri Dieback Response Team
0800 NZ KAURI or visit www.kauridieback.co.nz



Kauri Dieback Formative Research Report

May 2010

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Background and Objectives

Background to this project

- Kauri Dieback is a new disease that poses a significant threat to Kauri trees in the Upper North Island.
- The disease is spread primarily via the movement of soil as a result of activities such as mountain biking, tramping and hunting.
- In response to this new threat the New Zealand Government has funded a five-year programme aimed at containing the disease and managing high-value sites.
- As part of this programme a communications strategy has been developed.
- To assist in the development of specific and targeted communication activities, research is required to better understand attitudes and perceptions of high-risk users of affected or at-risk Kauri forests.
- This report details the findings of this research.



The research objectives

The objectives of the two stages are detailed below:

Benchmarking Objectives – to establish a robust and repeatable measure of:

- The proportion of the population of target areas (Northland, Auckland, Bay of Plenty, Waikato) who have undertaken a high-risk activity in the last 12 months
- The level of prompted awareness of Kauri Dieback
- The ability to identify a diseased tree
- The level of awareness of the desired behaviours in relation to limiting its spread
- The level of importance placed on the disease as a threat.

Development Objectives – to input into development by better understanding:

- The values and benefits associated with Kauri forest areas
- Existing risk associations of both the forest and the disease held by these groups
- Attitudes to the disease and to desired behaviours
- Response to intended messages around impact, desired behaviours, reporting processes, etc
- Tangible barriers that may prevent compliance.



The research method

MAF required two things out of this research – measurement and deeper understanding of the issues.

Measurement using an online survey:

- This survey established a pre-campaign measure against which future communication impacts can be evaluated.
- Data was collected through an online survey conducted using the Smile City e-mail poll. A final sample of 1,000 was achieved which is broken down by region and ethnicity as:
 - Region:
 - n=400 Northland
 - n=250 Auckland
 - n=100 Bay of Plenty
 - n=250 Waikato
 - Ethnicity:
 - n=169 Maori, of which:
 - n=94 live in Northland, n=26 live in Auckland, n=13 live in Bay of Plenty and n=36 live in Waikato
 - n=690 NZ European
 - n=263 Others
- Data has been weighted to ensure that each of the four target areas contributes equally to the overall measures. Individual region scores are also provided as a point of comparison.

Gain a deeper understanding using group discussions and interviews:

- 5 focus groups and 5 in-depth interviews were conducted as per below:
 - Group discussions with Hunters, Walkers, Land Owners, Dog Walkers, Contractors.
 - In-depth interviews with QEII National Trust Representative, an Adventure Walking provider, the Kauri Coast i-site, and two northern Pig Hunting Clubs.



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Summary of Findings



Summary of the Behavioural Change model

Key questions and how we are tracking

- Objective 1: Raise awareness
Question: Do people know the issue?
Answer: No, the vast majority of forest users are not aware of Kauri Dieback.
- Objective 2: Change attitudes or motivate
Question: Do they buy into it?
Answer: Yes, the vast majority believe this is an important disease that must be stopped.
- Objective 3: Improve knowledge
Question: Do they have the knowledge to comply?
Answer: No, most are not aware of what is required to limit the spread of the disease. Importantly some groups (namely hunters) doubt that the role of humans is the primary cause.
- Objective 4: Reduce barriers
Question: Is there anything stopping them?
Answer: Yes, without clear signage and fully equipped cleaning stations located at high-risk tracks, many will not comply with the required cleaning behaviours. Most will stay on tracks and keep away from roots, however.
- Objective 5: Create reminders
Question: What's prompting them to do it now?
Answer: Signs located on tracks are being noticed. However, this and the placement and condition of cleaning stations do not appear to be consistent.



Summary of Research Findings

1. The average awareness of Kauri Dieback across the four target regions is 21%. It is highest in Auckland and highest amongst trampers and hunters.
2. Kauri is valued because of its size, but its age and cultural significance are most important.
3. Disease is not a top-of-mind issue; pests and pollution are more familiar issues in relation to forest health.
4. Kauri Dieback is not well understood, very few understand what it is or how it is spread.
5. There is doubt about the role humans play in its spread, and this has the potential to undermine communication.
6. Once understood, the disease is considered to be critically important.
7. Cleaning is not considered to be easy and is unlikely to occur without the proper equipment being located on tracks.
8. Sticking to tracks is something most forest users would adhere to, although hunters suggest it's not realistic.
9. Messages that ask for help or are encouraging appear to be more effective than those that point blame or are negative.
10. Overall more information and greater awareness are required to provide people with a broader base of understanding.
11. Stakeholders are open to receiving more information and are keen to act as advocates.



So what should future communication look like?

- In high-risk areas signage needs to be authoritative. It's ok for the sign to look like it's laying down the law. This issue is serious enough for most to understand that it's very important for people to comply.
- Track signage needs to stand out in forest environments. Colours need to be high contrast and consistent across regions.
- Signs should carry important details clearly and succinctly. Fine print will not be effective, and too much text will be overlooked.
- Track signage can't educate fully, but important details should be concluded. The critical details are that:
 - Dieback is a disease that kills Kauri Trees.
 - It is spread by soil movement.
 - People can stop its spread by doing the right things.
- The authorities involved in the Kauri Management Team should be included on the signs. This provides authority and credibility to the messages.





1. Perceptions of Kauri and forest values

- Size is top of mind, but age is more important.

Kauris are more than just big trees

They are important to our culture and identity

- There is strong acknowledgement of the significant value of Kauri trees. They are important trees, and not just because of their size.
 - **Size:** This is a dominant association and often the first thing mentioned in relation to Kauri trees, although it's acknowledged by participants as not being the most important one.

'Kauris are huge and massive trees' (Dog walker)

- **Age of the tree:** Once aware of their age, respondents show a strong appreciation that Kauri trees take hundreds of years to grow. This fuels the importance people place on preserving the trees for future generations of New Zealanders.

'They take hundreds of years to mature and once they're gone, they're gone for generations' (Land owner)

- **Natural heritage – Tāne Mahuta a national icon:** Many respondents recognised Tāne Mahuta as an important and significant part of New Zealand's identity.

'If Tāne Mahuta was infected, it would be pretty significant news' (Hunter)

'Tāne Mahuta is a New Zealand icon' (Land owner)



Kauri's are more than just big trees

(cont'd)

- **Economic value:** It is acknowledged that Kauri trees attract significant numbers of tourists and bring economic benefits to related communities.
- **'Bush food':** Kauri sap holds some significance amongst Māori respondents, who recounted stories of using sap as a natural chewing gum.

Implications: It is important that the range of values, beyond size, is reflected in communications. Particular value will be gained in referencing the trees' age and their cultural significance. The use of the term 'majestic' used in the existing messaging, while evoking size, falls short in describing the full range of values attributed to Kauri.





2. Perceptions of forest threats

- Young people think of pollution, older people think of pests.

Disease is not top of mind as a forest threat

Pest and pollution are the higher profile threats

- In discussing potential threats to forests generally, the most salient aspects were:
 - **Pollution:** The human impact on the natural environment was raised as a threat to forests. Young people in particular raised pollution as being a major threat.

'I mainly think of pollution in the forest, people leaving rubbish around' (Young walker)

- **Pests:** Introduced pest species was a threat recognised by a broader range of respondents. Possums and stoats were mentioned across all groups. There was also good familiarity with Dydimo as a significant pest. The impact of pests on native trees, bush and bird wildlife was well recognised.

'Possums are a terrible problem. Stoats as well' (Land owner)

- **Disease:** Disease was raised only in the context of Kauri trees. Those with high involvement with Kauri trees, especially land owners, proactively raised Dieback. Others were less aware and less familiar with forest disease generally. In the case of young people, there was a particularly poor understanding of how disease works and what it does in a forest context.

Implications: Disease is not the first thing that comes to mind when people think of forest health. It will be important to raise the profile of forest disease and forest health to support this campaign. Explanation of how disease works in a forest context is also required. Encouragingly most understand the nature of disease threats once provided with a simple explanation.



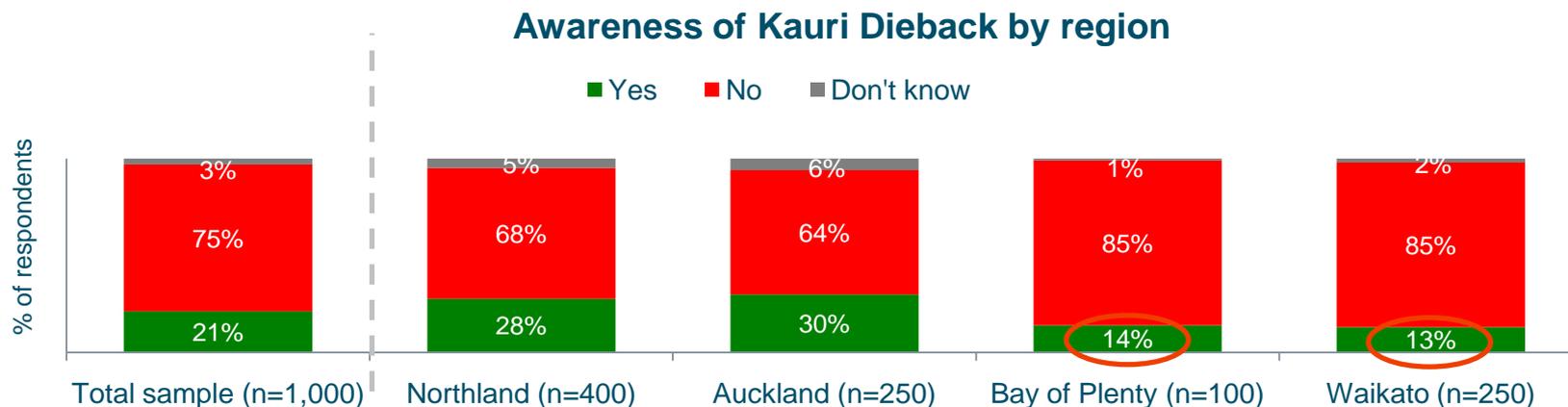


3. Awareness of Kauri Dieback

- Awareness is low and varies by region and forest activity undertaken.

Awareness of Kauri Dieback is low and mixed

The online survey shows one in five are aware based on prompted recall



- Those significantly more likely to be aware of Kauri Dieback:
 - Are aged over 60 years old (42%)
 - Have been tramping (44%) or have taken visitors out (37%) in Kauri forests
- Those significantly less likely to be aware of Kauri Dieback:
 - Live in the Bay of Plenty (14%) or Waikato (13%)
 - Are aged under 29 years old (16%)
 - Are of Pacific Island origin (3%)

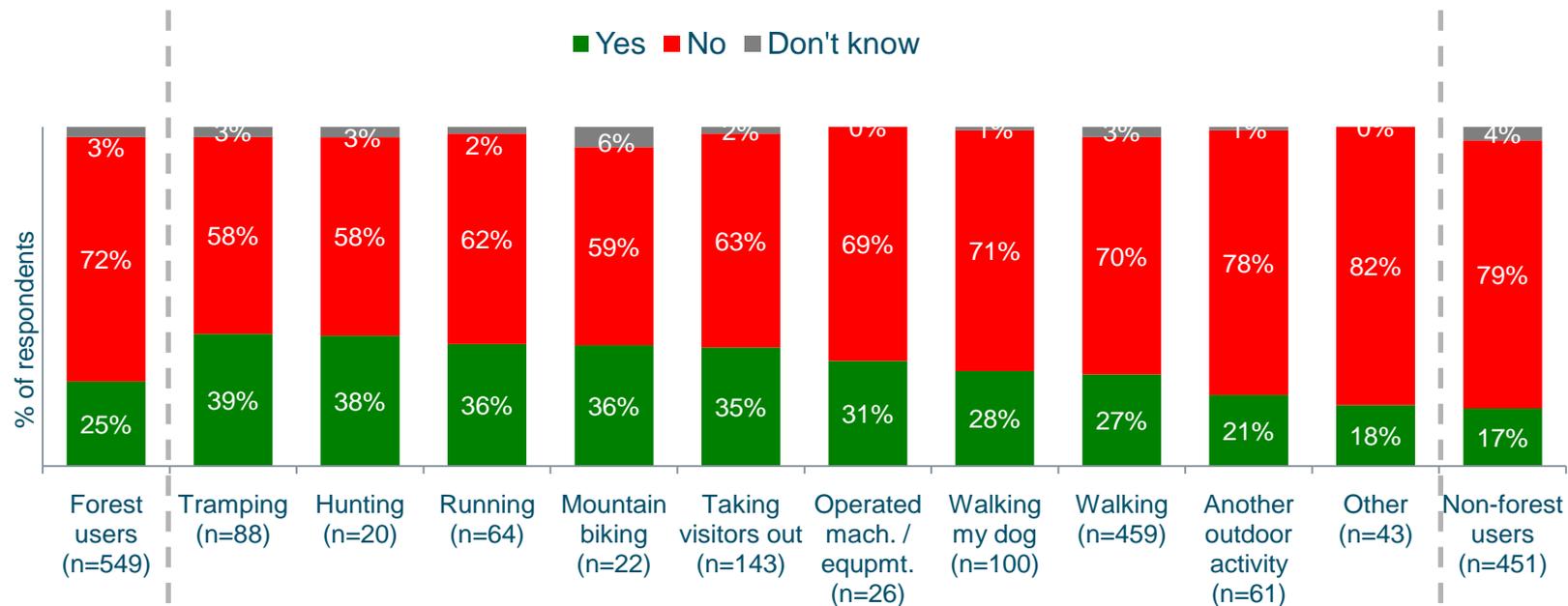
Implications: We need to raise the profile of Kauri Dieback in all locations, otherwise risk spreading the disease between areas and risk low compliance in newly infected areas.



Forest users are more aware of the disease

The online survey shows that hunters and trampers have the greatest awareness

Awareness of Kauri Dieback by activity



- **Trampers** are significantly more likely to know what to do to prevent the spread of Kauri Dieback (18% vs. 6% of forest users who know what to do to prevent the spread).
- **Runners** are significantly less likely think management of the disease is 'important' or 'very important' (57% vs. 72% of forest users who think management of the disease is 'important' or very important').





Awareness comes from a range of sources

Group discussions reveal that clubs and signage are playing a key role in raising awareness of Kauri Dieback

- Focus group participants point to a range of information sources:
 - **Clubs:** Tramping and walking clubs appear to be active in distributing information related to Dieback. Hunting clubs do not appear to be distributing information to members; however, previous TB information sessions conducted with hunting clubs suggests this could be an effective forum.
 - **Interactions with DOC officials:** DOC appears to be raising awareness amongst hunters and trampers / walkers when contact is made in forest areas.
 - **Track signage:** Signage has been effective in raising awareness with heavy forest users.
 - **Cleaning stations:** Some had seen cleaning stations in action – a strong and memorable symbol.
 - **Seeing diseased trees:** Land owners in particular have become aware of Dieback through seeing diseases specimens on or close to their properties.
 - **Website:** Very few had visited a website. One hunter claimed that the information had not been updated for some time.
 - **Contractor education:** Almost all contractors were aware, and many were made aware via employers.



Role of word of mouth

People are talking about Kauri Dieback

- It's clear from the focus group discussions that people are talking about Kauri Dieback.
- However, given the relatively low level of understanding and the new nature of the disease, it is also clear that not all that is being discussed is based on sound evidence.
- The danger of this is that it may undermine more evidence-based communication efforts.

'It's not humans, it's the pigs, it's the ozone, it's the water table' (Hunter)

- Additionally rumours of research outcomes also risk undermining communications efforts. An example is the outcome of research on pig snouts. This was raised in groups with different people suggesting the research showed both the absence and presence of the disease on the snouts.

Implications: It is important that as new information comes to hand, it is distributed quickly and clearly via key channels and to all relevant stakeholders.





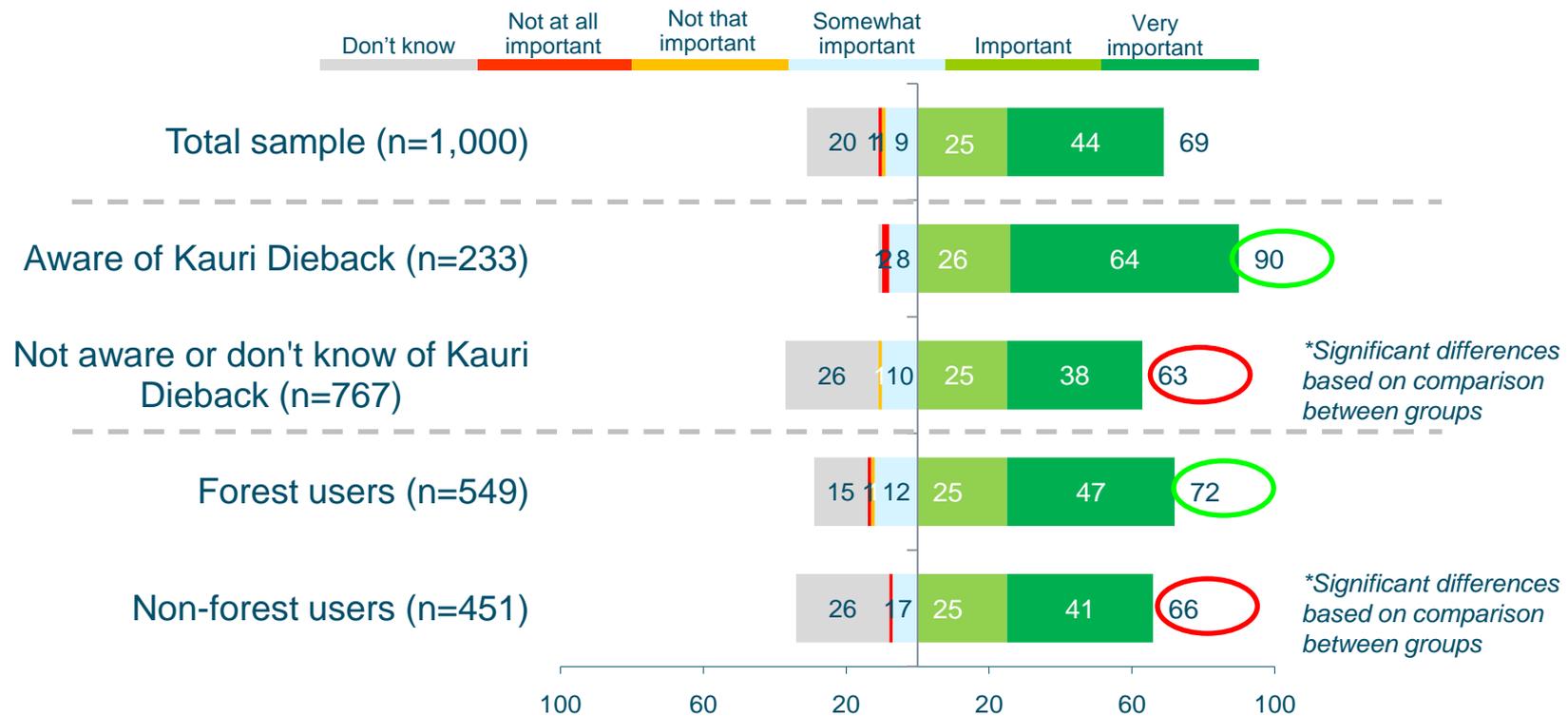
4. Understanding and importance

- One in five don't know how important the disease is.
- However, even a simple description of the disease creates a real sense of urgency.

The majority believe this is important

The survey shows that importance is highest amongst those aware; however, 29% of forest users rate the disease as less than important

Stated importance of Kauri Dieback



Note: There are no significant differences by region



Basic facts are enough to create concern

It kills, there is no cure, this is scary

- Focus groups were provided with a simple written description of Kauri Dieback.
- Reactions to this basic description of the disease ranged from resignation to shock, worry, anger. However, all group participants considered this to be an important threat and one that required immediate action.
- The phrases that resonated most strongly were as follows:
 - **It kills Kauri trees of any size:** *'It's hard to imagine it can kill a huge old tree' (Land owner)*
 - **It kills tree from inside out:** *'It sounds sinister' (Walker)*
 - **There is no known cure:** *'Pretty scared when Kauri trees die' (Land owner)*
 - **It affects only Kauri trees:** *'No other native trees' (Hunter)*
 - **It spreads by soil movement:** *'Makes you think what else you need to do to stop' (Walker)*
 - **The tree bleeds sap:** *'Oh my God, that's dramatic' (Walker)*

Implications: Use of the word 'kill' appears to be appropriate and creates an immediate reaction. This also suggests words like 'threaten' may not be as effective in creating a sense of urgency.



However, low understanding raises lots of questions

Communications need to assume a low base of knowledge

- Even the more involved and aware individuals such as land owners and hunters have what they accept is a low understanding of the disease. They also acknowledge that authorities do not have all the answers.
- People want to know more about the disease and typically asked:

'What does it do?' (Walker)

'How long has it been around?' (Walker)

'How many trees are have been infected or killed?' (Land owner)

'Is it naturally occurring?' (Land owner)

'Why haven't we heard of it?' (Dog walker)

'If it's been around, then something's changed, what's changed?' (Dog walker)



This creates a strong desire for information

The perceived lack of profile is creating frustration

- There is a real hunger for more information from all forest users involved in the group discussion.
- Those with low awareness (e.g. walkers) are surprised that more has not been made of the disease in the media. There is an expectation that the disease would be more prominent and that given the nature of the threat they would be better informed.

‘They need to inform people about this disease, put it on TV and in the papers, increase awareness since it’s so important. I’m just surprised I’ve not heard more about it’ (Dog walker)

- Those more aware and involved (hunters / land owners) acknowledge this is a new disease and are more forgiving of the perceived lack of profile. However, some desire more frequent updates as to what is being done from a research perspective.

‘They need to keep us better informed. If they don’t know, that’s ok, just tell us what you are doing’ (Land owner)

Implications: It’s important that actions to investigate and control the disease are broadly communicated and that key stakeholders are engaged to assist in the distribution of this knowledge.



Uncertainty can undermine compliance

Some doubt human vectors and will need more evidence to buy into sustained compliant behaviours

- Hunters in particular are sceptical as to the role humans play in spreading the disease. Hunters, land owners and some contractors displayed high levels of understanding and had actively sought out information relating to the disease and its spread, both in New Zealand and internationally. In particular water table movements and pigs were mentioned as other likely causes:

‘They are trying to make us do something when they know nothing’ (Hunter)

‘Why stay on tracks? With other pythora disease, they thought it was people’s feet and quarantined the area, nothing changed, then they thought it was the wheels of fire trucks, in the end it was changes the water table that spread the disease’ (Hunter)

‘Water moves soil’ (Contractor)

‘[I think] there was proof that pigs spread the disease and soil in West Auckland, but not sure if they do in the Waitakeres’ (Hunter)

‘It’s on the leaves, birds spread it’ (Hunter)



Key gaps in information

What's being done, where is it, and how does it spread?

- **Research updates are critical:** Hearsay and lack of research updates have the potential to undermine communications campaigns.

'I heard they are doing research on pig snouts' (Hunter)

'I can only assume lots is being done, but they need to pass on the information. I don't see people come into the bush [for research]' (Hunter)

'Let us know what they do know, don't worry about what they don't know' (Contractor)

'If someone says 'I don't know', then why should I bother?' (Contractor)

- **Disease mapping:** For many knowing exactly how many trees and what areas are affected is critical – to identify which areas specifically have the disease, which don't, and which are under threat. This will also help clarify at which locations 'spray' must be used.

'Is it only in some places and not others?' (Land owner)

'Until find fix to the problem they should just stop walks. Stop tourists, you can't stop hunters, but you can stop tourists' (Hunter)

'When do I use the spray – going in or out? Which end of track? Is the disease here or not here?' (Dog walker)

Implications: Information needs to be shared in a proactive way especially to more informed and concerned groups. This information should have a focus on available evidence and highlight the role humans play in spreading the disease.





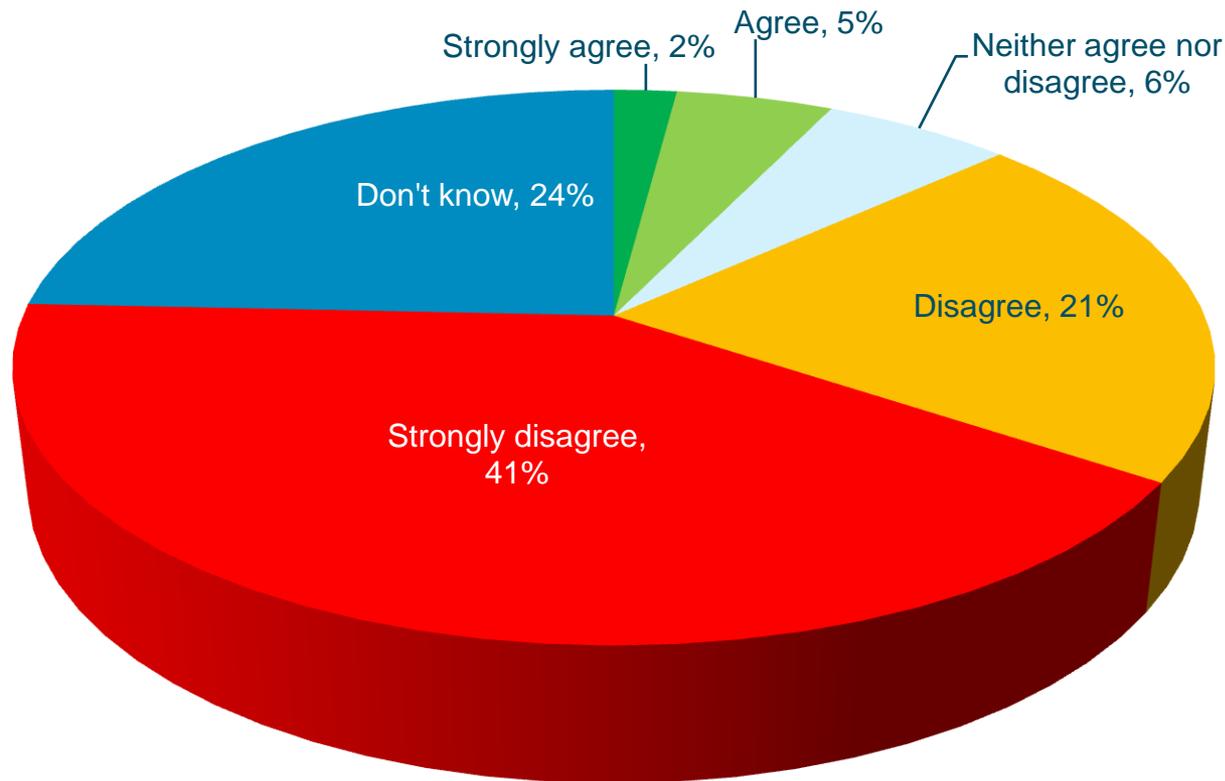
5. Recognising Kauri Dieback

- Very few are confident they can recognise the disease.

Very few can identify a diseased tree

The survey shows that only 7% of the respondents could identify what a diseased tree looks like

Agreement with 'I know what a Kauri tree infected with Dieback looks like'
(n=1,000)



Implications: Increases in familiarity will come from a low base. Use of images of diseased trees should raise familiarity with Kauri Dieback.



Even those familiar are not confident

Images of the disease will be important to create familiarity

- **There is low recognition of infected trees:** Most group participants have either not seen an infected tree or are unsure of the symptoms. Several have heard of or experienced cases of misdiagnosis.

'I have no idea what it looks like' (Walker)

'[I'm] not confident enough to recognise it' (Land owner)

*'Not sure, I was positive I had Kauri Dieback on a tree, but it ended up being something else'
(Land owner)*

- **Use of images of the disease has an impact:** Actually seeing a diseased tree is highly memorable and has a significant impact on attitudes to it. Those who described the disease mentioned 'discolouration' and impact on 'tree roots and canopy'.

'Can tell Kauri Dieback if in the canopy and by colouring. Yellow and it gets into tissue of the tree and infects the bark and then the whole tree' (Contractor)

'You can see canchoring of the tree and gets up into canopy' (Dog walker)

Implications: Communication should include images of infected trees – both to aid recognition of the disease and to reinforce the urgency of the problem.





6. Complying with the correct behaviours

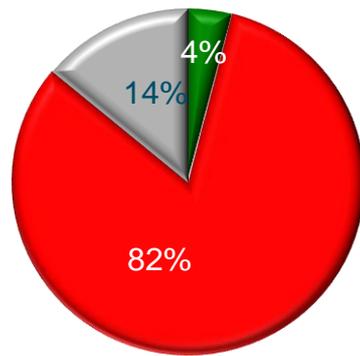
- Most will happily comply, others need more evidence.
- Young people will be harder to influence.
- Signs and cleaning stations are critical.
- There are significant barriers to scrubbing – if it's not easy, it won't happen.

Few know how to prevent its spread

The survey shows that very few are aware of the correct behaviours

Know what to do to prevent Kauri Dieback spreading?

■ Yes ■ No ■ Unsure



Base: All respondents n=1,000

- The most mentioned methods were:
 - Clean or wash boots
 - Clean tools
 - Disinfect boots and tools
 - Keep off or stay away from roots
 - Keep to trails
- Significantly more from the Auckland regions say they know how to prevent the spread, with 14% saying they know vs. 4% across the four target regions.

Implications: Awareness of correct behaviour will come from a low base.



Confusion even amongst those aware

Group discussions reveal mixed awareness and some confusion

- There was good awareness of how to prevent spread from those involved with clubs and other organisations.
- Members of tramping clubs, hunting clubs or contractors were most aware of the need to scrub boots and the use of 'trigene' spray.

'Yes, we'll use the spray to clean boots if it's there' (Walker)

'We use trigene to clean boots before and after go in there' (Contractor)

- There is some confusion as to how effective the spray is, and whether all the soil needs to be removed for disinfection to be effective.

'If you spray, are you covered? How covered?' (Land owner)

- Some contractors admitted that while they had access to spray and brushes, cleaning of boots and equipment may not happen all the time.

Implications: Cleaning equipment needs to be available at all high risk tracks. Positive reinforcement and reminders are required to encourage regular users to continue to clean effectively.



People respond differently to behaviours

Most are willing to do whatever it takes, others are less compliant

Focus group discussions reveal very different responses to the disease:

- **Walkers / trampers:** *Tell me what to do and I'll do it – just make it easy for me to comply.*
- **Dog walkers:** *This is important, but it'd be a nightmare keeping my dog on a lead; anyway, my dog stays pretty close to me most of the time, I don't think he's a real threat.*
- **Land owners:** *We are passionate about our trees, help us save them, involve us in the solution.*
- **Contractors:** *We know and we're already doing the right things, well, most of the time, just keep us informed and remind us of the importance.*
- **Hunters:** *Tell me what causes it, then I'll buy into the strategy. We are not convinced humans are the cause.*

Implications: Some groups will be more demanding in terms of the information and engagement they require. It will be important to adjust communications strategies to the needs of these disparate audiences. For example, hunters and land owners were typically more technically aware than other groups, and may require more detailed explanations of the disease.



Compliance with 'sticking to tracks'

Most already do because of safety and accept this, others will not

- To the majority of forest users involved in the focus group discussions, sticking to tracks made sense and did not appear to limit their use or enjoyment of forests. Most walkers and trampers stayed on tracks anyway, due to safety concerns.

'Easy to do, should do it anyway and easy to control kids' (Walker)

- Hunters, however, believed this was not possible for them to comply with, given the very nature of hunting. They rationalised this in two ways:
 - Firstly the animals they were hunting in their view posed a bigger risk of spreading the disease than them.
 - The numbers of hunters and the locations in which they hunt posed a far lesser risk compared to the numbers of walkers and tourists who use the forest.

'What hunter will stick to a track?' (Hunter)

- Dog owners involved in the discussions tended to let their dogs off leash in areas they walked, claiming that the dog tended to stay with them on tracks anyway. However, they would respond to signage to keep their dogs on a leash if required.

Implications: Instructions are most effective when people understand why they are important.



Compliance with 'scrubbing boots'

Without the proper equipment this is unlikely

- While all involved in the discussions agreed that this was important and something they should do, most did not believe they or others would comply if the required equipment (brush, detergent, water, antiseptic solution, etc) was not available.
- Casual walkers and private hunters could not see themselves scrubbing boots if equipment was not available. It was also unlikely they would go home to scrub their boots, with most believing they would simply forget once they had left the forest.
- Encouragingly those involved with walking or tramping clubs claimed their groups were prepared with brushes and solutions, and that compliance was good with group members.
- Likewise contractors and professional hunters carried with them cleaning equipment and appeared to be compliant on most occasions.
- Importantly, however, when cleaning is being done, it's not necessarily with the disease in mind.
 - 'Usually use a hose for washing boots' (Land owner)*
 - 'Clean boots with dishwashing liquid, but don't use spray all the time, sometimes not there' (Walker)*
 - 'Wouldn't clean the pram, with baby and two dogs... Too difficult' (Dog walker)*

Implications: Placement of cleaning equipment with signage that is clear and explains how the disease is transported will be critical to encouraging desired behaviours.



Cleaning stations are a critical element

They need to be visible and well maintained

- Cleaning stations, beyond being an important mechanism in preventing spread, appear to be effective in raising awareness and reinforcing the importance of stopping the disease. For many this is how they found out about Dieback and what is needed to prevent its spread.
 - **Using and seeing others is important:** Seeing others use the cleaning station reinforces the behaviour and reduces any reluctance or fear associated with using the station.
 - **Maintaining stations:** It is critical that stations have spray and are in good usable condition. Respondents recounted situations where bottles were empty or not even present in Kauri Dieback areas.
 - 'If I see empty bottles at stations I'd think it's gone away or not serious anymore' (Land owner)*
 - 'I won't go looking for a station, but if it's there I will remember to use it' (Walker)*
 - **Station 'image':** It's important that stations are seen as safe and that the association with disease does not cause people to avoid the stations in fear of contamination.

Implications: Cleaning stations need to be prolific in risk areas and need to be well maintained to both increase the profile of Kauri Dieback and facilitate compliant behaviour.



Compliance with ‘staying off roots’

Most would comply, but they are not sure why

- While almost all accept this direction, some do not understand why they need to stay off the roots of trees.
- Once people understand the disease infects trees from the roots, they are happy to stay away from them, but recognise that this won't be possible in some locations.

‘On some tracks the roots are on the path [so have to walk over them]’ (Contractor)

Implications: Communications need to explain why staying off roots is important – otherwise people will be less likely to comply.



Young people will be harder to influence

Concepts are less familiar, attention is less focussed

Younger



- Younger forest users are more motivated by social values of forest use and less aware of their impact on the forest.

'I don't really care [when go off tracks], it's not a big thing' (Younger walker)

'We don't really hold to the rules, and honestly it would be hard to get our group to really listen [to instructions signs]' (Younger walker)

'Wouldn't really carry the weight of that knowledge [spreading Kauri Dieback] as a burden down to the waterhole' (Younger walker)

Older



- Older forest users are motivated by enjoying the wilderness values and tranquillity of the forest, and overall are more aware of their impact on the forest.

'Once I have that knowledge, then I wouldn't go off tracks' (Older walker)

'Absolutely, I'd do whatever it takes. I would clean my boots at stations with spray if they are there, otherwise dishwashing liquid' (Older walker)

'I just would not go into an infected area' (Older walker)



Forest users would accept a quarantine

A drastic measure, but would accept if necessary

- Many in the group discussion proactively suggested quarantining areas to prevent people from entering diseased areas.

'Close off infected areas or keep away till problem resolves or goes away' (Land owner)

'Block off areas with Kauri Dieback, absolutely' (Contractor)

'Until find a fix to the problem then stop walks, but you can't stop hunters' (Hunter)

Implications: If required, preventing people's access to high-risk disease areas is likely to be accepted as an appropriate response to the disease – but only if the problem is understood.





7. Response to signage and messages

- How do people react to the signs?
- What do they like or dislike, and what are their concerns?

Approach to message evaluation

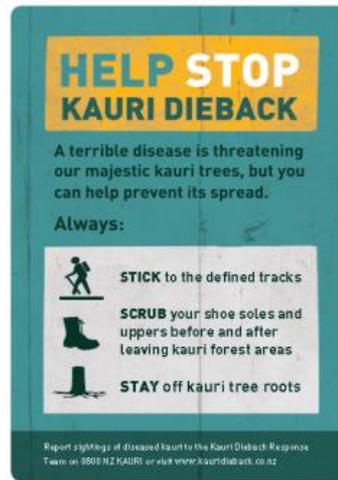
Three concepts were evaluated in focus group discussions

- Focus group participants were shown three different executions of Kauri Dieback signage, the purpose being to identify the most effective message themes and concepts.
- Each respondent was asked to write down their first impressions to avoid 'group think' effects.

1.



2.



3.



Overall response to sign concepts

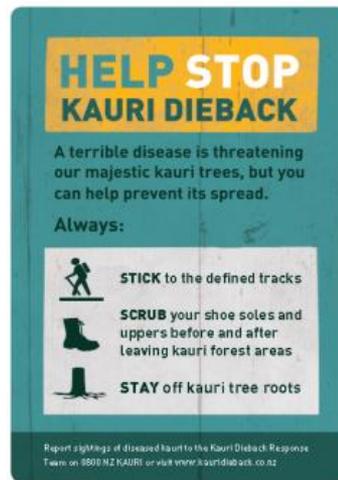
Generally clear, but more detailed information needed

- Concept #1 was generally preferred by group participants, as it reflected the urgency many felt in response to learning more about Kauri Dieback.
- Concept #2 was seen as positive in that it was simple and clear, and invited help from individuals. Older respondents and those involved in clubs preferred this sign.
- Concept #3 was the least preferred, as people felt it laid blame when the disease was still poorly understood. Others felt the sign overly complex, although they suggested it would be effective as a brochure, as it could contain more information and people would be more likely to engage more deeply with it.

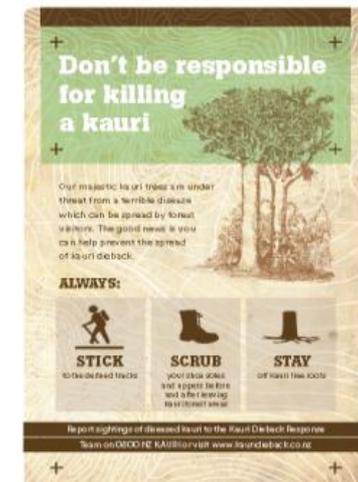
1.



2.



3.



Should we call it Dieback?

Yes, but need to consistently communicate what it is

- Where there was awareness and familiarity with the disease within the focus group discussions, it was almost always associated with the term 'Dieback.'
- PTA was rarely mentioned and was a term unfamiliar to the vast majority of participants.
- Some perceived Dieback to mean that the tree might die, but then come back to life.
- While the literal meaning of the term was questioned, the term Dieback did not appear to be a barrier to understanding or comprehension of what the disease did nor how important its threat was.
- Some suggestions were made to create a nickname similar to '*Rock Snot*'. Suggestions included *Kauri Killer* or *Kauri Cancer*. Overall these were not well embraced by group participants who believed that with increased awareness the term 'Dieback' could become more familiar and carry the significance it requires.

Implications: Dieback is a suitable term for the disease, but will require education – especially with regard to the long-term consequences of the disease.



Response to Concept #1

Effective, but over the top and scary for some

- This concept was the most supported, largely due to it creating a sense of urgency and grabbing attention.
- **Negatives:** It has associations with industry or toxic waste, and for some this created unnecessary concern. Some felt it looked like a road sign or other hazard warning sign, and that its use in a forest setting might not be effective. Others felt it deteriorated from the natural forest experience by suggesting there was something harmful to humans in the area.
- **Positives:** Most believed this would grab people's attention. Almost all suggested this would be a good sign to mark a disease boundary.
- **Summary:** This concept brings to mind poisons and hazards more than it does trees and people's role in spreading the disease. While effective as a boundary marker, it's not likely to advance understanding or individual buy-in to prevention.



'The colours suggest it's urgent, but the wording isn't frightening' (Walker)

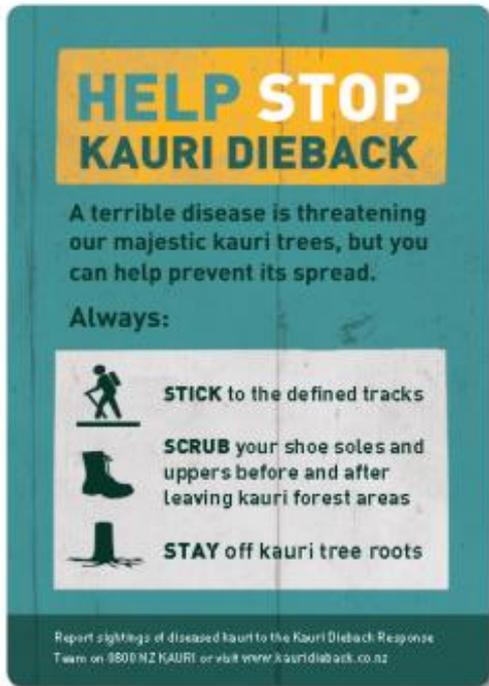
'I feel dread, fear' (Land owner)

'It's frightening, looks like labels on poisonous bottles' (Land owner)



Response to Concept #2

Inviting help is positive, but does not carry enough authority



- **Positives:** This concept created individual engagement. It brought to mind the role individuals could play in stopping the spread.
- **Negative:** Some felt the colouring and muted tones may not be noticed in a green forest environment, and that the overall style of the sign, while simple, was more like a reminder to those already aware than a first warning to those unfamiliar with the disease.
- **Summary:** The fact that this concept creates engagement and brings to mind an individual's role in fighting the disease is important. More prominence is required that may be achieved through adjustment of colouring and tone.

'This is positive, makes me want to help by doing this. I feel better' (Hunter)

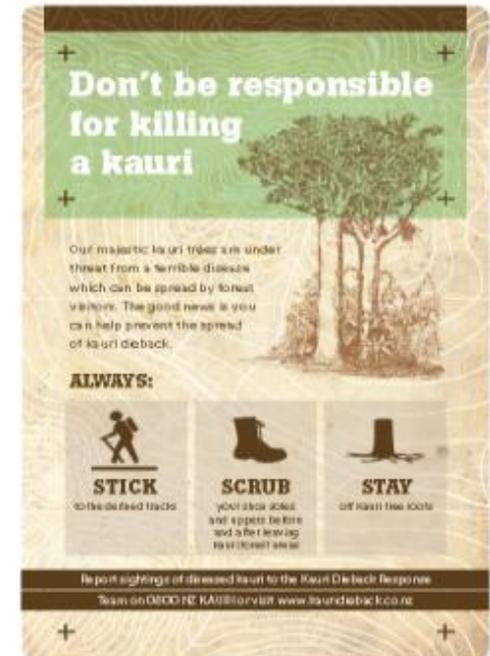
'It's involving, it involves you, and that's important' (Land owner)



Response to Concept #3

This is a brochure that blames

- **Positive:** This was the only sign that included a picture of a tree, and while the quality of the image was criticised, it was generally accepted that seeing a kauri in some form was an important inclusion on a warning sign. This was also the only concept that used the word 'killing'. This creates a sense of urgency and is effective in grabbing attention and creating a sense of importance.
- **Negative:** Almost all felt this sign was 'pointing the finger' and laying unnecessary blame. It was also criticised as having a style more suited to an information brochure than used on a forest track where few believed it would grab people's attention.
- **Summary:** Caution is required, as it creates a negative reaction that has the potential to limit buy-in and engagement. It is more suited as a brochure information piece than a forest track sign.

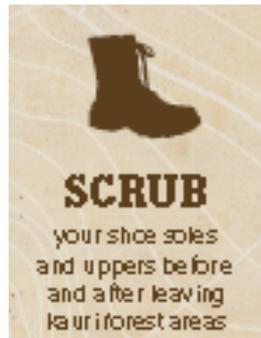


'How am I responsible?' (Walker)
'Looks like side info, read me if you want to. Looks like historian sign' (Walker)



Response to 'Stick, Scrub, Stay'

Generally understood, but some confusion



- The groups discussed in detail the phrase 'Stick, Scrub, Stay' and explored the icons used to communicate and represent the required behaviours.
- Some were confused by the icons and had to read the text before they understood the instructions.
- Most recognised the attempt to create a catchy and memorable phrase that would keep these behaviours top of mind for forest users.
- Some mention was made of other slogans such as Check / Clean / Dry, Slip / Slop / Slap and Clean / Cook / Chill. Some felt that this slogan may be difficult to remember in the context of a range of other popular three-word phrases.
- There was concern that signage relevant to dog owners or mountain bikers was not used in any of the concepts.

'Do we need to keep dogs on lead? What about their paws?' (Dog walker)

'Do wheels need to be cleaned too?' (Dog walker)





Response to the 'Stick' icon

Generally understood, but some minor confusion

- For the majority there was no issue in comprehension, with most understanding that sticking to a path is important. For others, however, the image of the person using a stick and the use of the word 'stick' led to some confusion.

'I thought it meant to use a stick?' (Walker)

- Others suggested using images of footprints in a path would be a more appropriate image to better communicate the intent of the instruction.
- Many believed that the yellow sign version of this could be useful if placed on paths where sticking to the track was critical.

'You want something kids can read quickly, not have to pull out reading glasses' (Hunter)

Implications: Removing the image of the stick may reduce the risk of confusion without reducing the impact of the icon.





Response to the 'Scrub' icon

Generally understood, but some confusion

Again, most in the group discussions understood the intent of this icon. However, there were several issues raised as potential barriers to compliance:

- **Not having the right equipment is barrier:** Without the proper equipment located at the track, few would make the extra effort of scrubbing and would be unlikely to remember to do so once they had returned home. Many saw the lack of a fully equipped cleaning station located at the track as a key barrier to complying.

'Scrub with what and where?' (Walker)

- **Not enough detail is a barrier:** Several questions were raised around how much dirt had to be removed, and if spraying the antiseptic onto dirt was sufficient. Many felt that even if there was equipment, few would scrub properly.

'How much do I have to get off, getting it out of all the cracks is unrealistic' (Tramper)

- **No mention of bikes, dogs and other equipment:** There were questions raised about why images of bikes were not included, and whether the cleaning of dogs feet was required.

'Do we need to keep dogs on lead? What about their paws?' (Dog walker)

'Do wheels need to be cleaned too?' (Dog walker)

Implications: 'Scrub' is understood as an action, but instructions need to provide clear guidance for all forest users.





Response to the 'Stay' icon

The least clearly understood

- 'Stay' was the least well-understood icon. However, this is likely to be remedied if the phrase 'stay off' was more clearly included in the text.
- Many struggled to correctly connect the instruction to the image.

'Stay? Lost me here' (Contractor)

'Should say 'stay off'' (Land owner)

- There was some discussion around why staying off roots was necessary. This led to some conflicting reasons being raised, from damaging the roots to disturbing soil and spreading the disease. It also led to some concerns that many tracks had roots crossing them. This raised concerns that it would be difficult to both stay on tracks and off roots.
- The consensus was that more information was required to support this icon.

'Do I need to stay away or stay off? I need more information than this' (Dog walker)

'Do we need to keep dogs on lead?' (Dog walker)

Implications: 'Stay' needs further explanation both to make the intent of the icon clear and to explain why staying off roots is important.



Implications for message wording

Use of the right words is important

1. **Use the word 'disease':** The term 'Dieback' and the concept of forest disease are not familiar. Messages need to mention these together to reinforce this link.
2. **Use the phrase 'spreads by soil movement':** This creates a better understanding and removes the vagaries around other causes, e.g. pigs and water table movement. Once people are aware that Dieback is a disease that can they can spread by soil movement, they are more primed to adopt the correct behaviours. It gives them a stronger sense of 'why'.
3. **Use the word 'kills':** The word 'threaten' is not strong enough to be used on its own. This is a disease that kills, and this phrase creates the strongest response from all groups.
4. **Use the words 'help' and 'protect':** These words enhance engagement and buy-in.
5. **Avoid blame or accusational tones:** This has the potential to reduce buy-in.
6. **Be careful with overly emotive language:** Describing the disease as 'terrible', while useful to create engagement, has the potential to diminish the seriousness of the issue as well as the authority of the signage.

*'Don't think it's serious, well it's only terrible. [Better to] use fatal as it actually kills tree'
(Land owner)*



Implications for signage

Placement and consistency is important

- 1. Signage can't do it all:** The signs are best used to raise awareness in-situ and to reinforce messages introduced in a wider campaign designed to educate forest users on Kauri Dieback.
- 2. Need to create a message structure:** It will be important not to have the signage try to achieve all communications objectives. Brochures, public relations, seminars, etc, all will play a role in raising awareness and building support for the measures required to limit the spread of the disease.
- 3. Signage to indicate infected, at-risk and disease-free areas:** This appears to be important in raising people's awareness of where the disease is located.
- 4. Images are important – makes it real:** There is a strong desire to have images of infected trees on signage to build awareness and familiarity with the disease. Images of how to effectively clean boots may also be required.
- 5. Signage at entrance and exit to tracks:** Many are concerned that they will enter a track in a location where there is no signage. There is also an opportunity to customise signs at track exits to act as a reminder to reinforce positive behaviours.



Implications for signage (cont'd)

Placement and consistency is important

6. **Uniform language and symbols across regions:** Terminology and icons should be consistent so as to be recognised by those moving between forest areas.
7. **Demonstration of how to use cleaning stations:** This may be an effective means of raising awareness and alleviating fears of using cleaning stations. Some stated that it was by watching others use the stations that they became aware of their importance.
8. **Keep stakeholders engaged and leverage them to distribute information:** Effective stakeholder management will be critical to maintain support and to facilitate the effective distribution of information to a wide range of audiences.



The existing sign available on the ARC site has good elements worth retaining

PROTECT OUR KAURI

Kauri dieback disease is killing kauri trees.

It spreads via soil movement. Act now to stop its spread.

ALWAYS

- > Keep to the defined tracks
- > Clean your footwear before and after leaving kauri forest areas
- > Stay away from kauri tree roots

Report sightings of diseased kauri to the Kauri Dieback Management Team on **0800 NZ KAURI** or visit **www.kauridieback.co.nz**



- Direct and clear
- Provides explanation of how it is spread
- Provides clear contact details for reporting
- Also shows key organisations involved, providing additional authority to the sign and its message.





8. Interviews with stakeholder organisations

In-depth interviews

- QEII National Trust Representative:
 - **What they do:** QEII Trust helps private land owners in New Zealand to protect significant natural and cultural features on their land through open space covenants in perpetuity
 - **Role of respondent:** Liaison for 250 land owners (many have Kauri, some of which may be infected with Kauri Dieback)
- Adventure Walking Puketi:
 - **What they do:** Take tourists / walkers out to Puketi forest
 - **Role of respondent:** Chief guide (the most senior guide)
- i-site Kauri Coast
 - **What they do:** Provide tourist information to visitors in the area
 - **Role of respondent:** Manager of Kauri Coast i-site
- 2 x Pig Hunting Clubs
 - **What they do:** Pig hunting member association
 - **Role of respondent:** Presidents



Awareness and importance

- All those interviewed could recall Kauri Dieback and were aware that it kills the tree; however:
 - None were confident that they knew what it specifically does to the tree.
 - None have actually seen an infected tree, other than in photos.
- All would approach their Regional Council or DOC for additional information. None were aware of the Dieback website, but assumed they would find it via a generic internet search or via a link on the DOC or MAF websites.
- Not all feel they can accurately identify symptoms, although, some are 'watching' trees suspected to have the disease. QUEII and Guide mentioned correct symptoms including 'bleeding sap', 'peeling of bark' and 'yellowing of leaves'.
- All believed that more information was required to both inform themselves individually and allow their organisations to act as effective advocates.
- All feel management of the disease is important and are aware it is spreading across the Upper North Island.



Knowledge and use of sprays

- All except Adventure Walking showed little or no knowledge of how to use sprays, where to access them, and how best to distribute them.
- As with the general public group discussions, there is a mixed understanding amongst these organisations of the activities that cause the spread of Kauri Dieback.
 - The i-site contact did not know that Kauri Dieback was spread by moving soil.
 - QUEII and the Adventure Guide did know that it's spread by soil movement via foot traffic, but also mentioned wild animals, e.g. pigs and goats.
 - The Okaihau Pig Hunting Club contact suspected that pigs and birds are more to blame than humans, citing remote trees that are infected but not exposed to regular foot traffic. The Far North club had very little knowledge of the disease or what causes its spread.
- Apart from the Adventure Walking guide, there was a low understanding of the use of spray, with QUEII and the i-site centre not knowing what it does or how it is used.
- Adventure Walking also claim there is poor administration of spray for the general public in Puketi forest. Adventure Walking carry their own spray bottles but notice there is nothing in place for general public apart from one spray station on the main track. Adventure Walking was the only group to have strict measures in place to prevent spread of disease, with walkers spraying their feet with trigene when entering and leaving the forest.



Limited knowledge sharing evident

- Within the organisations interviewed there were mixed degrees of information sharing.
- There was some good collaboration between Adventure Walking Puketi and DOC, with DOC being responsive to potential sightings or concerns raised.
- QEII does contact ARC for information and advice, as it is needed largely in responding to concerns raised by land owners. However, the QEII contact does not actively visit website for updates and assumes they will be contacted when developments occur.
- The i-sites do not have anything in place to share information between sites.
 - The i-site in the Waipoua forest is the main centre for information on forest-related issues. However, the i-site contact was concerned that there are many entrances to the forest and the Kauri Coast i-site needs to be able to give information to visitors before they head straight into the forest.





Response to messaging and requirements

- Response to 'Stick, Scrub, Stay'
 - No major concerns apart from potential language barriers, i.e. each of those individual words may have a different meaning in different cultures.
- Additional materials are needed to support these stakeholders in communicating to their members and constituents:
 - Adventure Walking Puketi:
 - Spray stations are needed on all tracks to support existing signage
 - Local Māori are identified as high-risk users: *'in there on their horses and use the forest a lot without any law or permission'*
 - i-site Kauri Coast:
 - They suggest using a postcard with images of Kauri Tree and 'Protect the Kauri' message on the back to hand out to visitors going into the forest
 - An A4 size poster to go on the notice board
 - QEII:
 - They require better access to spray to pass on to land owners



Implications

- Each organisation interviewed was open to receiving more information. Importantly they were also keen to assist by distributing this information to their members or customers.
- It's important to note that these groups are not proactively looking for information on Dieback. This suggests that the communications will need to be proactive, identifying these groups and making contact with them to ensure they are aware of the disease and the potential role they may play in raising awareness and limiting its spread.

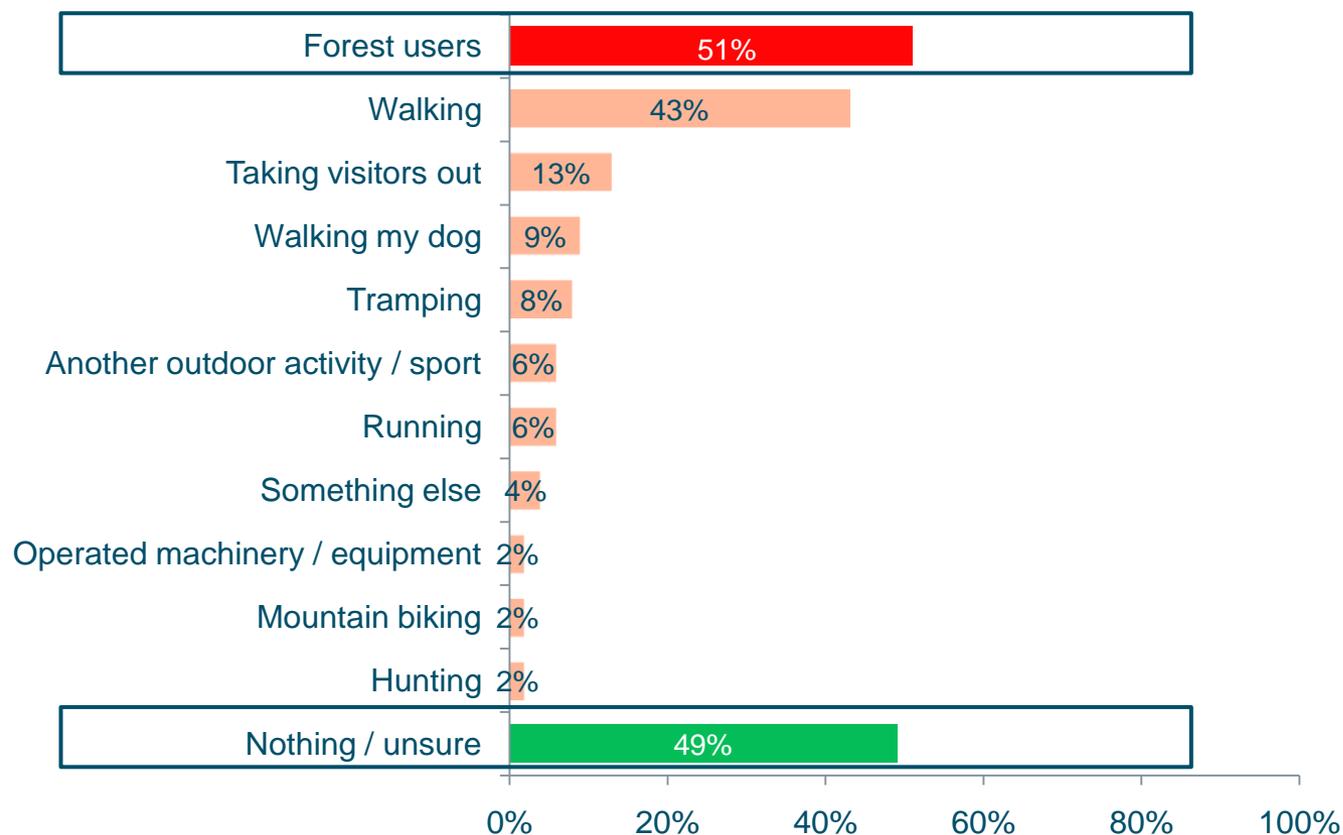




Appendix

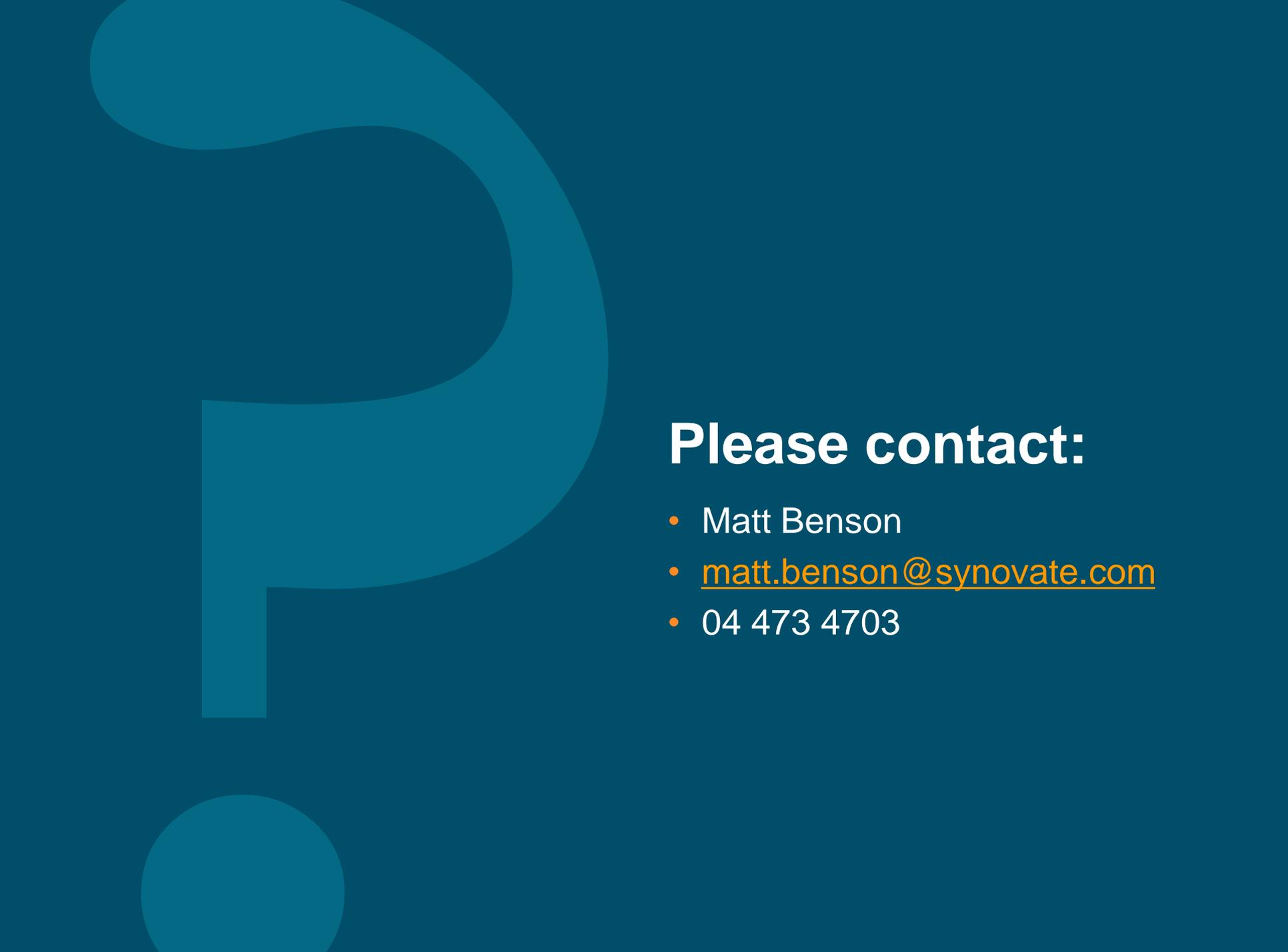
Profile of forest use within the four target areas

Forest activities undertaken in the four target regions



Base: All respondents n=1,000





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