



# Kauri Dieback Recreation Project

## Kauri dieback signage icons: public testing

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# 1 Executive Summary

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*Phytophthora agathidicia*, the cause of Kauri Dieback disease, continues to be a major biosecurity and conservation threat for New Zealand. The Ministry of Primary Industries (MPI) leads the Kauri Dieback Management Programme and collaborates alongside the Department of Conservation (DOC) and relevant councils. One part of this programme is to coordinate messaging and signage which can be used by all stakeholders to both educate track users and influence their behaviours, to stop the spread of the disease. Icons developed by MPI and currently in use by programme partners, and bespoke icons used by the Department of Conservation, were tested in three public settings. Results indicated that icons were well understood for messages about brushing and spraying your shoes. The new MPI 'stay on track' icon, which includes images to not touch the trees, was more successful rather than the more widely used original 'stay on track' icon. The original DOC 'inspect' icon failed to achieve any level of correct understanding. The two newly designed 'inspect' icons were more successful in portraying the message to check your shoes, but still fail to invoke the message to check specifically for soil.

## 2 Introduction

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### 2.1 Background

Kauri Dieback (KD) continues to be a major biosecurity and conservation issue for New Zealand. In response, the Ministry of Primary Industries (MPI) leads the Kauri Dieback Management Programme and collaborates alongside the Department of Conservation (DOC) and relevant councils within kauri lands. One part of this programme is to coordinate messaging and signage which can be used by all stakeholders, to both educate track users and influence their behaviours, to stop the spread of the disease. Part of this signage are a variety of icons which can be used to visualise intended behaviours to the track users.

### 2.2 MPI Icons

MPI icons were developed to cover a wide range of forest user scenarios, including track users and contractors. This study focused only on the main track user icons currently being utilised by programme partners (Figure 1).

### 2.3 Department of Conservation Icons

One part of DOC's focus towards KD is the formation of the Kauri Dieback Recreation Project (The Project) in 2015. The Project is tasked with minimising the spread of KD, focusing on people using tracks on public conservation land within the kauri lands.

While most DOC signage uses the MPI designed icons, the creation of the Mark II Prototype cleaning station (cleaning station) has resulted in new methods of cleaning equipment being available to track users. Additionally, DOC's cleaning station instructions have the added step of inspect for soil before disinfecting, rather than the 'scrub, spray, stay' message of other programme partners. In turn this has required the development of bespoke icons specific to these cleaning stations. Figure 2 illustrates the icons currently used at the cleaning station, with the fourth instruction using an MPI 'stay on track' icon (Figure 1, stay on track #1).

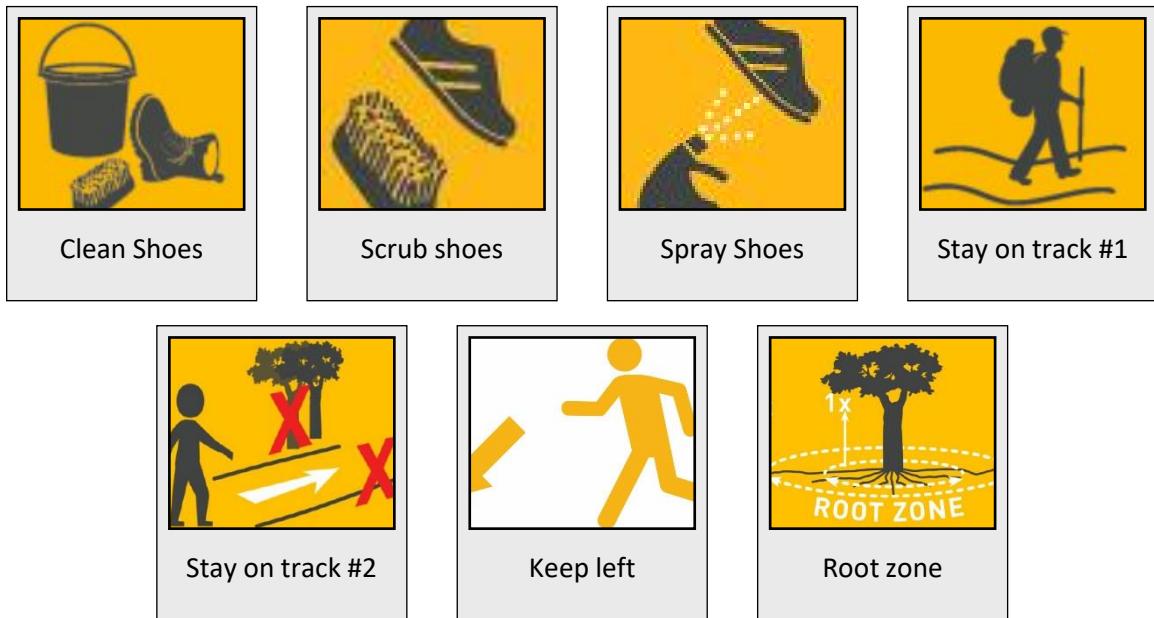


Figure 1: Ministry of Primary Industries Kauri Dieback Management Programme icons



Figure 2: Instruction icons currently used at DOC Mark II Prototype cleaning stations.

Track user compliance research at the cleaning station suggested some of the bespoke icons may not be effective in communicating the desired behaviours required. Correct behaviours as per the instruction panel at the cleaning station include, 'brush', 'inspect' and 'disinfect'. These combined behaviours resulted in ≤65% compliance. Whereas when the 'brush' and 'disinfect' only were added compliance increased to between 72% and 95%.

To increase the 'inspect' behaviour, two new icons have been developed (Figure 3). These require testing to determine the level of public understanding of their meaning before being used.

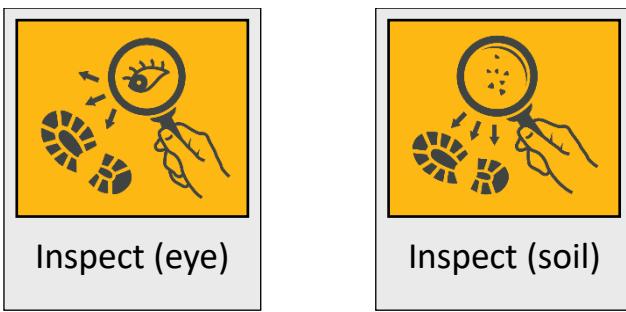


Figure 3: New 'inspect' icons

## 3 Methodology

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### 3.1 Location, dates and respondent overview

Locations away from the cleaning stations or forest tracks were chosen, with the specific intention to question the public out of context of where the icons would normally be employed. This removed any likely inference of location on the respondents understanding of the icon.

#### 3.1.1 Fullers Ferry: Auckland to Rangitoto.

Visitors to Rangitoto mainly walk to the summit, which is an hour's moderate walk. There are no cleaning stations on Rangitoto, however prior to departure passengers are given a biosecurity brief including a conservation dog inspection of their packs for pests such as rats and mice. It should be noted that this may have had some impact on the survey results. The survey was undertaken on Friday 21 September 2018, on the way from Auckland to Rangitoto. Five DOC staff tested two icons each over the course of approximately 25 minutes. The staff were in DOC uniform. On the day of the study Sport Auckland were taking over a group of Green Prescription walkers, who have a variety of health challenges and have not visited the island before. The ferry also had a variety of tourists, including those with English as a second language.

#### 3.1.2 Auckland Botanic Gardens

The gardens are popular with Aucklanders as a place to exercise, visit the variety of gardens and exhibitions and events, and walk their dogs. The survey was undertaken on Saturday 22 September 2018, between 10am and 12.30pm. A KD seminar was being held in the library from 11am to 12.00pm. Two DOC staff questioned people as they approached the main entrance. The DOC staff were in uniform. Note construction was underway so the main entrance was via the west side door. An effort was made to get a wide variety of ages and cultures and avoid any focus on visitors to the library for the KD talk, who were entering the separate library entrance.

#### 3.1.3 Wellington: City Centre

One MPI researcher was located within the central business district of Wellington city. He was not in uniform. Various street locations were used throughout the survey, to obtain a variety of people where possible. The survey was done on Wednesday 26 September 2018 from 10am to 12pm and then 1.30pm to 3.30pm.

### 3.2 Intercept Question

The public were shown one icon at a time printed on an A4 sheet, with a maximum of two icons only. They were asked what they thought the sign meant. No context was given, and no wording accompanied the signs. The exact words of the response were recorded. Note that for some locations not all icons were able to be tested. Total responses are noted below for each icon.

### 3.3 Analysis

Count responses were manually entered in an Excel summary sheet. Similar worded answers were collated together where applicable. Percentages of the total count for each icon were calculated.

## 4 Results

### 4.1 MPI Icons

The three icons intended to communicate the key programme message of scrub and spray, had a good understanding by the public of their intended message (Figures 4, 5 and 6).

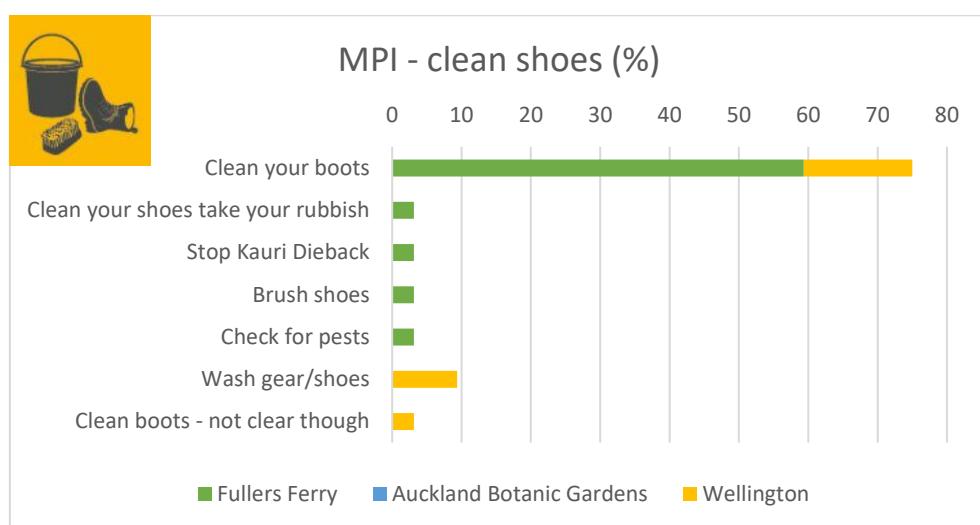


Figure 4: Percentage of responses. Fullers Ferry n = 23, Auckland Botanic Gardens n = 0, Wellington n = 9

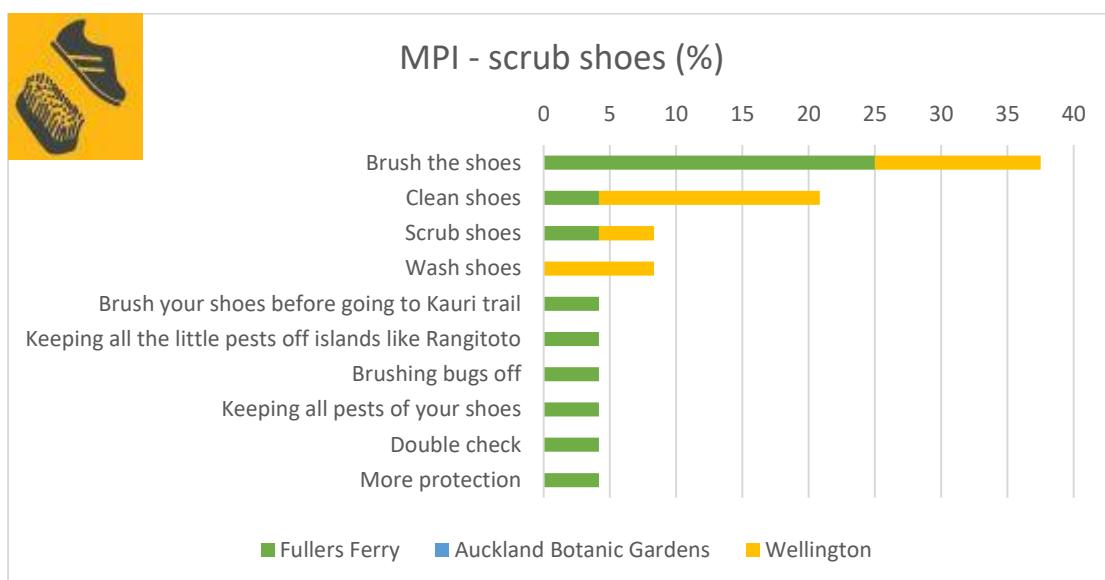


Figure 5: Percentage of responses. Fullers Ferry n = 14, Auckland Botanic Gardens n = 0, Wellington n = 10

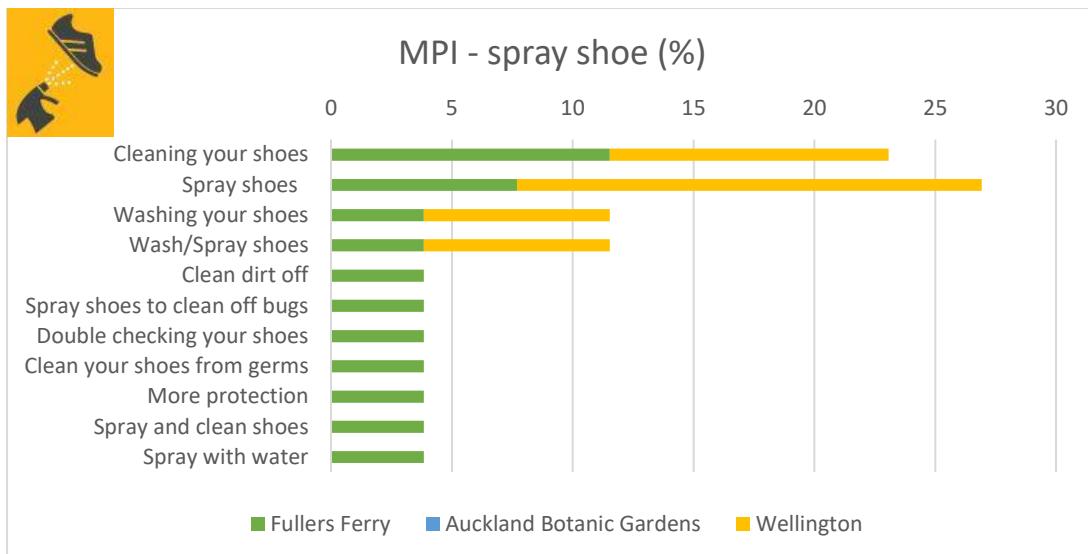


Figure 6: Percentage of responses. Fullers Ferry n = 14, Auckland Botanic Gardens n = 0, Wellington n = 12

Comparison of the two 'stay on track' icons indicated that there was not only a greater understanding of icon #2 to stay on the track, but the added message to not touch the trees was also effective (Figures 7 and 8).

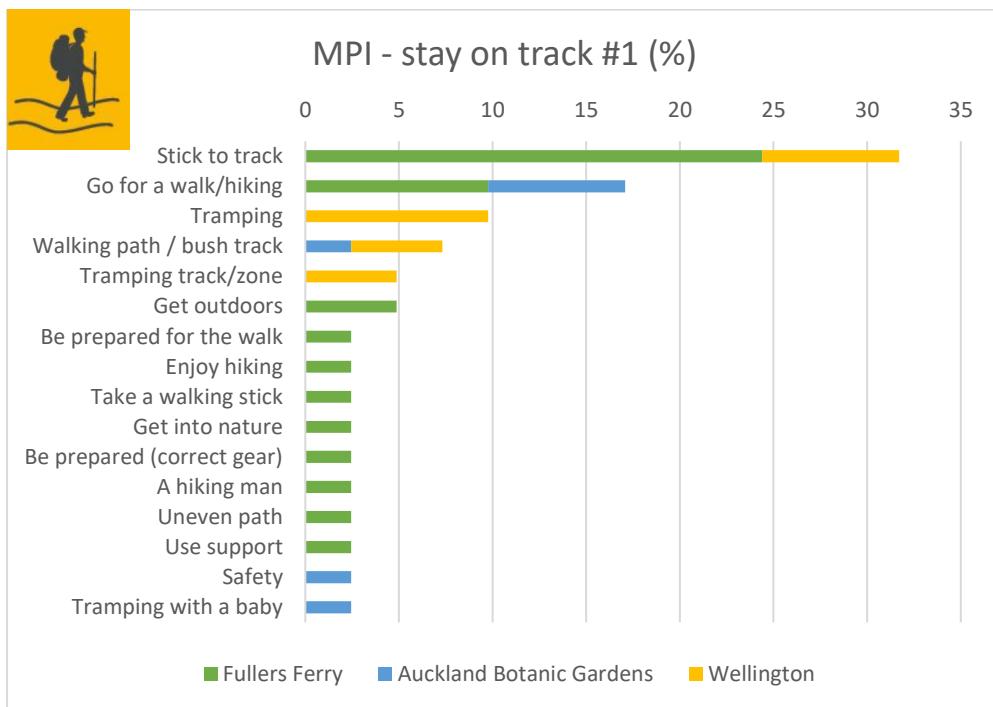


Figure 7: Percentage of responses: Fullers Ferry n = 24, Auckland Botanic Gardens n = 6 , Wellington n = 11

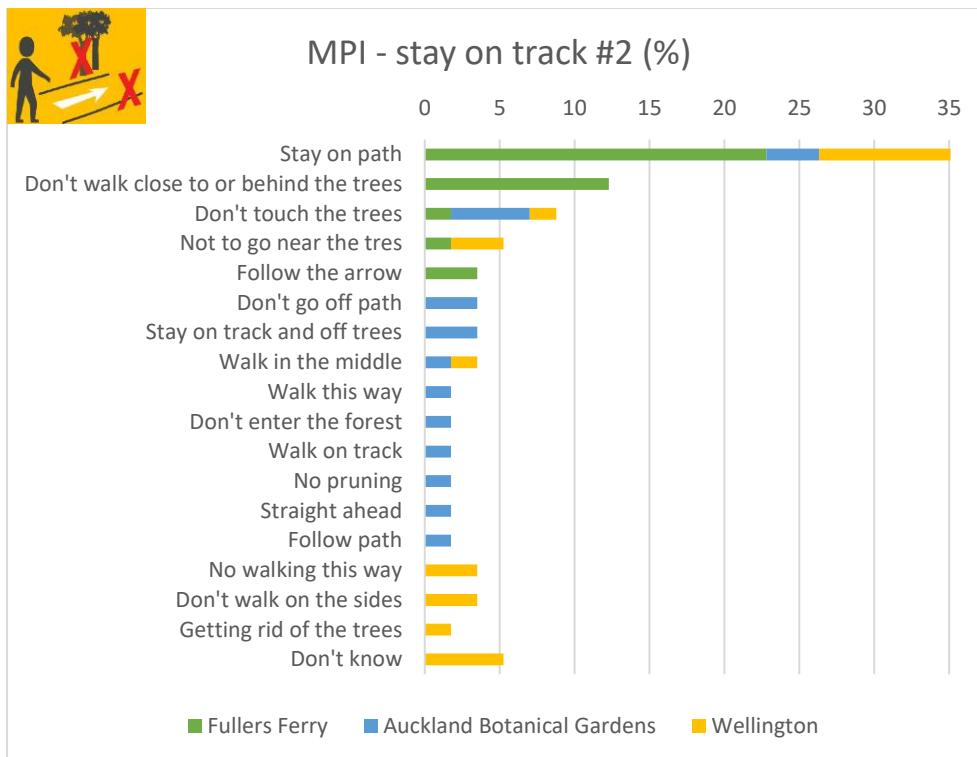


Figure 8: Percentage of responses. Fullers Ferry n =24, Auckland Botanic Gardens n =16, Wellington n =17.

The icon reflecting keep left appears to lose its effectiveness without the words ‘keep left’ under the sign, with no one indicating keep left. However, there was some association with both stay on track and follow this direction (Figure 9). Figure 10 indicates that there is little understanding of what is being communicated by the root zone icon, with a total of six out of 26 respondents identifying it with stay away from the roots or don’t walk on the roots. Four respondents did not know what the icon represented.

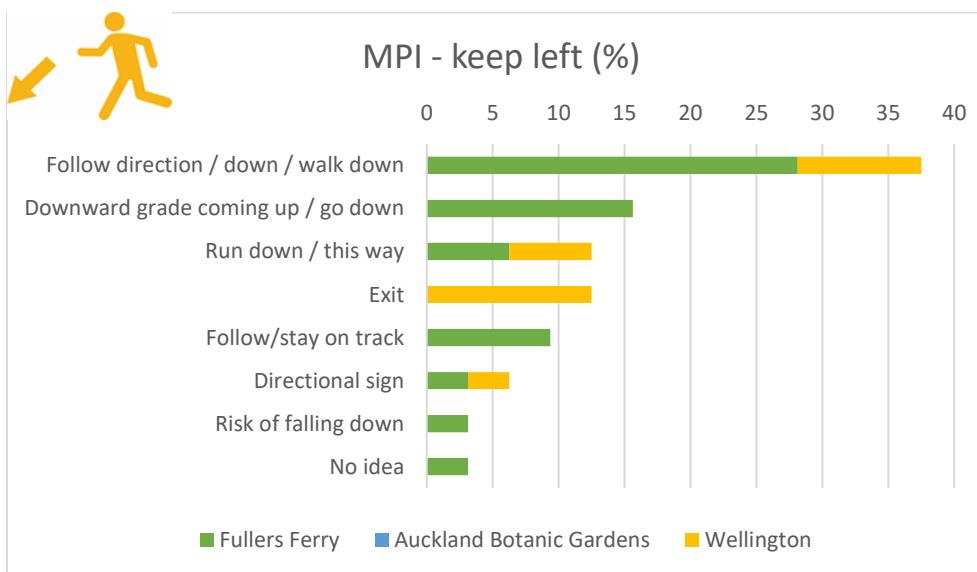


Figure 9: Percentage of responses. Fullers Ferry n = 22, Auckland Botanic Gardens n = 0, Wellington n = 10

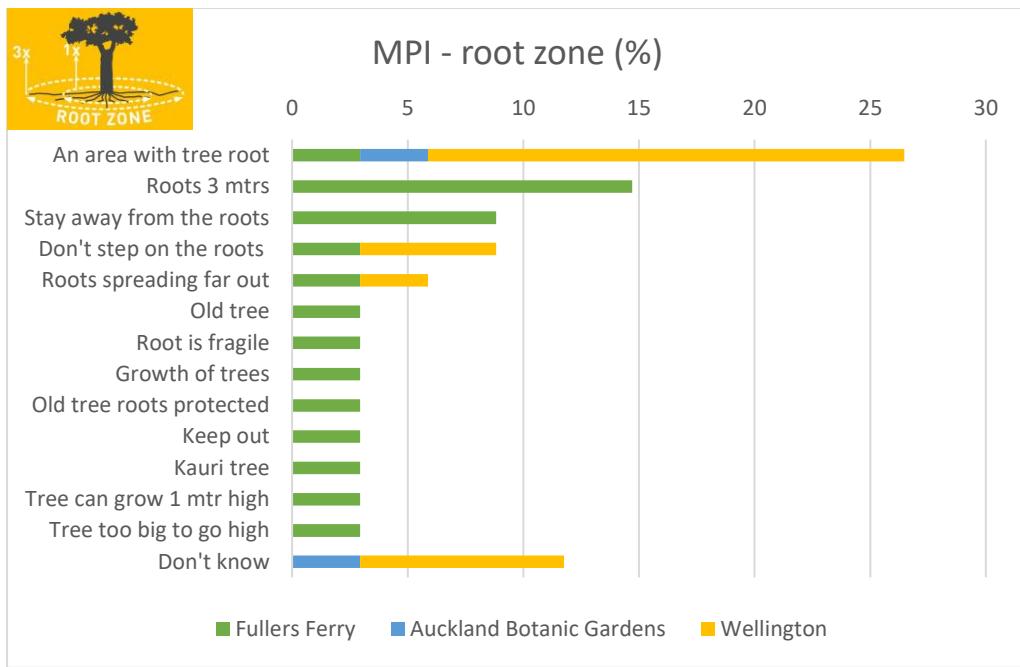


Figure 10: Percentage of responses. Fullers Ferry n = 18, Auckland Botanic Gardens n = 1, Wellington n = 7

#### 4.2 DOC Icons

Most respondents understood the intended message of the brush and disinfect icons effectively (Figures 11 and 12).

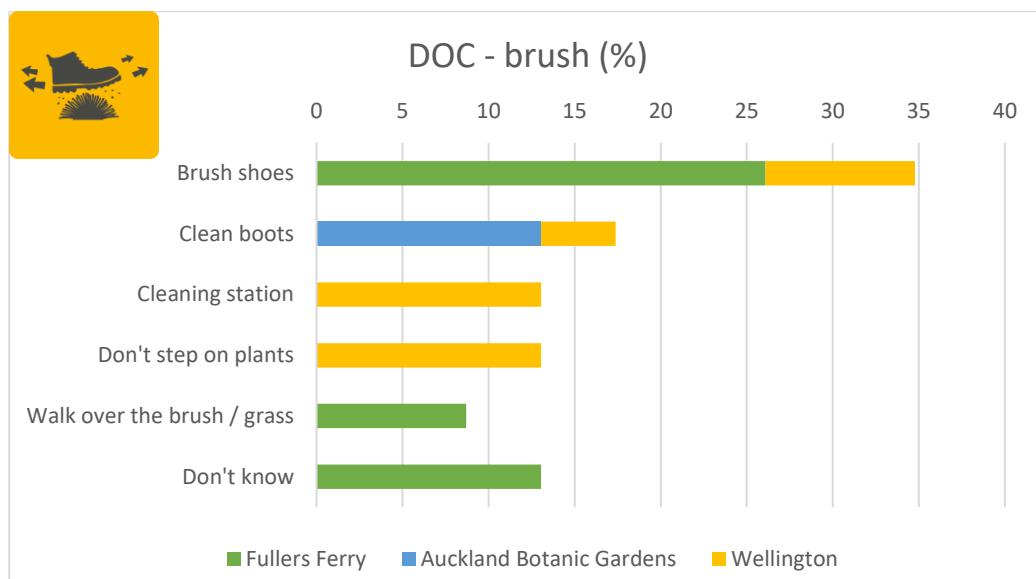


Figure 11: Percentage of responses. Fullers Ferry n = 11, Auckland Botanic Gardens n = 3, Wellington n = 9

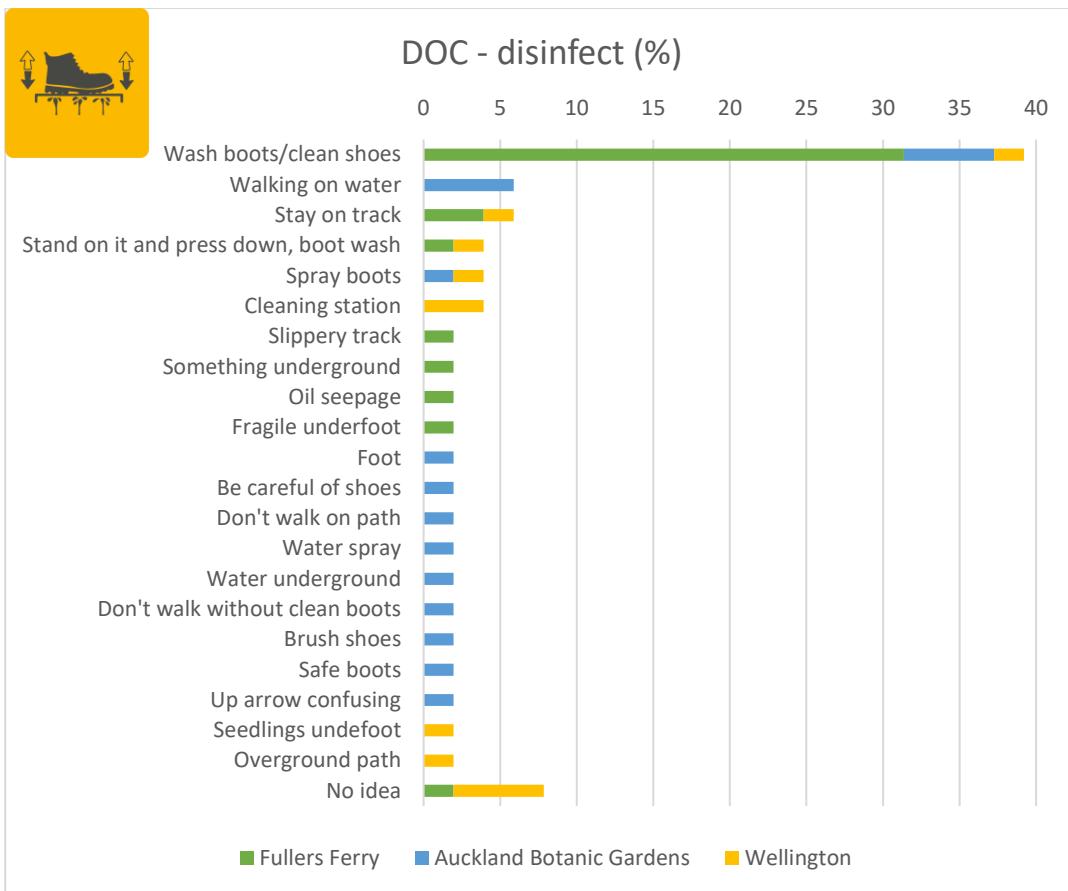


Figure 12: Percentage of responses: Fullers Ferry n = 23, Auckland Botanic Gardens n = 16, Wellington n = 8

The original ‘inspect’ icon results indicated little or no understanding of intended message to check your shoes for soil (Figure 13). In comparison both newly designed icons reflected more strongly the intended message to check your shoes or look at your shoes. However, while there is a greater trend of check your shoes, the results indicate these icons do continue to fail to be specific in evoking the behaviour of checking shoes specifically for soil (Figure 14 and 15).

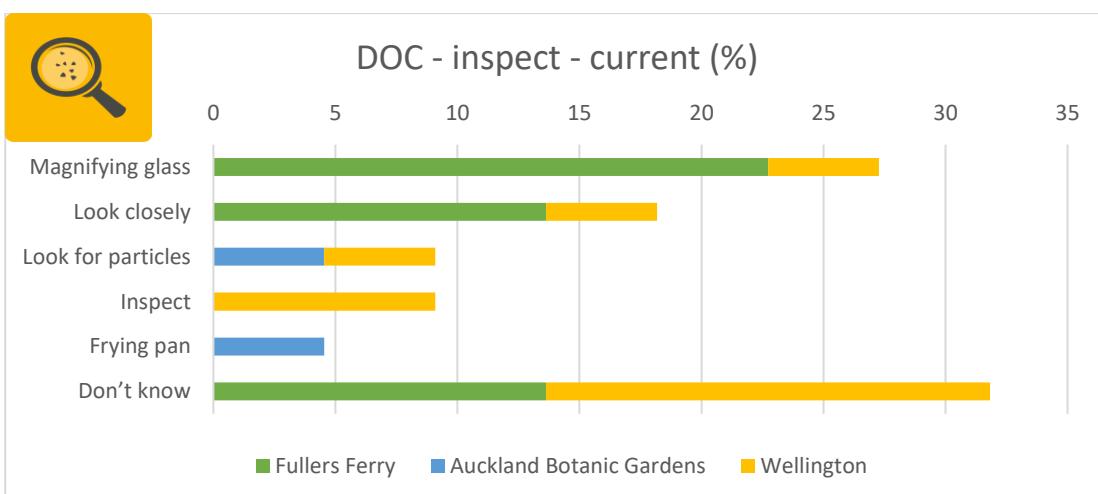


Figure 13: Percentage of inspect responses. Fullers ferry n = 11, Auckland Botanic Gardens n = 2, Wellington n = 9

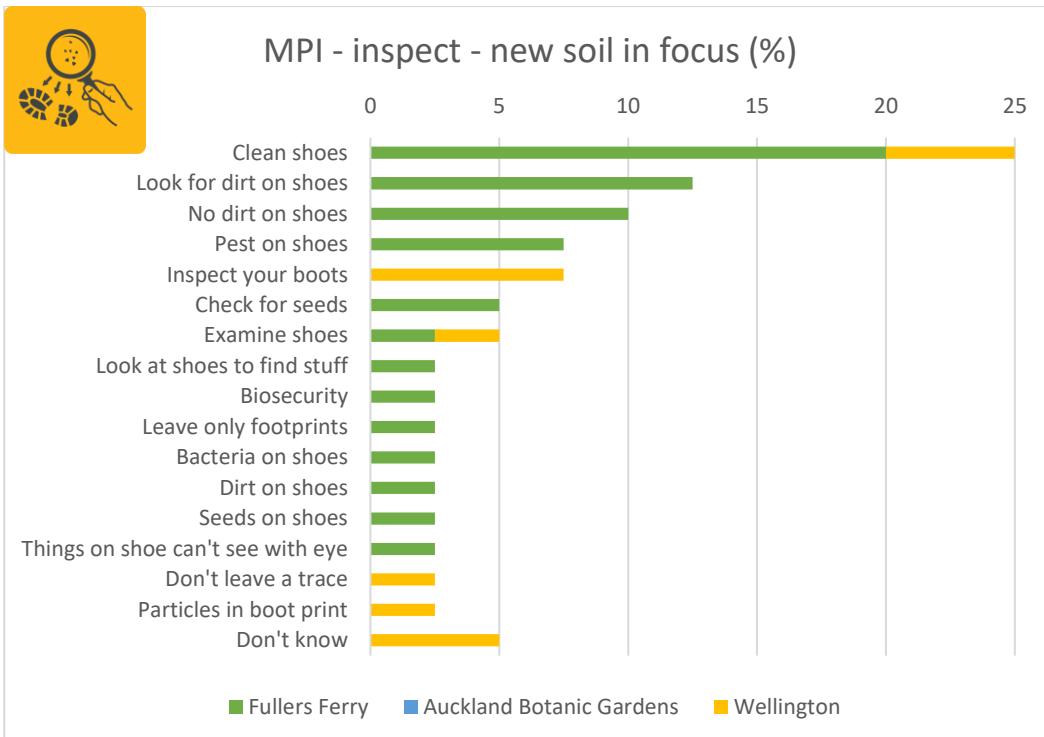


Figure 14: Percentage of responses. Fullers Ferry n = 30, Auckland Botanic Gardens n = 0, Wellington n = 10

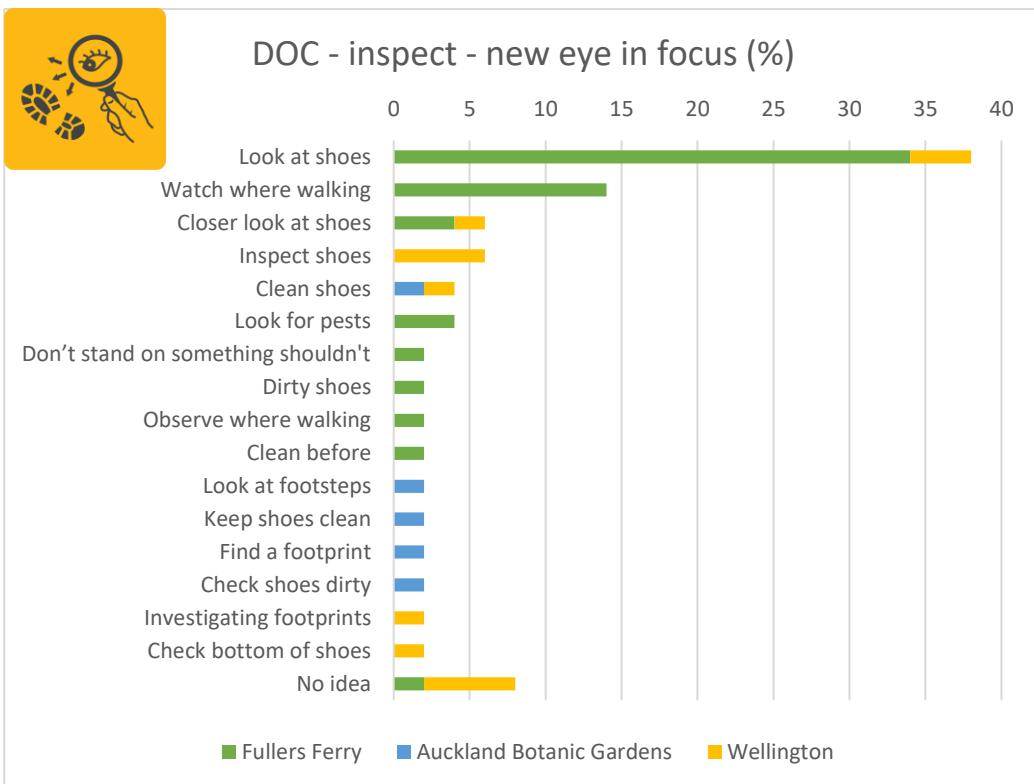


Figure 15: Percentage of responses. Fullers Ferry n =31, Auckland Botanic Gardens n =5, Wellington n = 12

## 5 Discussion

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For the simpler icons, such as scrub, brush, and spray, the public had a good understanding of their intended meaning. This was the case for both the MPI and DOC icons. More complicated messages had more varied results, with the root zone, stay on track #1, and inspect (original) icons less effective.

Comparing 'stay on track' #1 and #2 icons, #2 is more effective with a greater number of respondents being specific and saying 'stay on track'. This icon had the advantage of communicating both stay on track and don't touch the trees. Feedback from researchers also indicated that people with English as a second language had a greater understanding of the significance of this sign, with the red crosses indicating danger to them. It is recommended stay on track signage is changed, over time, to this newer icon on signage.

For the DOC 'inspect' icons, there was little understanding of what the original icon was aiming to communicate, reflecting the lack of this behaviour being shown at cleaning stations. The new designs (inspect eye and soil, Figure 3) showed a greater understanding of the behaviour to check/look at your shoes. However, there continues to be the challenge to communicate that the behaviour is to specifically check for any remaining soil before disinfecting shoes. Results will be provided to the graphic designer to focus on this aspect of the icon to consider an alternative way to communicate this. If this proves to not be possible, it is recommended that the inspect original icon is changed to either one of the new icons, as results were far improved in comparison.