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The Four Sisters in the Waipoua Forest. Photo: Bert Bourgeois

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KauriKonnnect

What's in a name?

ABOUT TEN YEARS AGO, a sharp-eyed staff member from what was then the Auckland Regional Council, noticed a number of dying kauri trees in a valley near Piha, in the Waitakere Ranges, west of Auckland. When scientists tested some soil samples from beneath those trees, they found a fungus-like pathogen that hadn't been recognised in New Zealand before. It was suspected that this mysterious pathogen was what had killed the Piha kauri.

In 2008, soil samples collected in 1972 from beneath dying kauri trees on Great Barrier Island/Aotea were re-tested. The 'Piha pathogen' was found in these as well. It was during this time that scientists identified the pathogen as a new organism in its own right and gave it the temporary taxonomic name of *Phytophthora* taxon *Agathis*, or PTA (a taxonomic name is one which readily indicates which genus an organism comes from, and which species it relates to). For the first time it was clear that this pathogen caused kauri dieback.

Since then, our ability to detect the pathogen and understand how it spreads has drastically improved our knowledge on where the disease is located (supported in many cases by the public calling in sightings), and what has to be done to prevent it spreading further.

Last year the pathogen that causes kauri dieback was given a new, permanent name. From now on it will be known, among scientists at least, as *Phytophthora agathidicida*. The change is a reflection of the progress made in understanding the disease generally, as well as how it affects kauri ecosystems. And it's a case of the more we know, the more there's not to like...

- » **To start with, it's not stupid.** In its active phase, the pathogen appears able to sense kauri trees' roots, and uses its tail to wriggle towards them.
- » **It's hard to kill** – for instance, if heat is being used to sterilise equipment, temperatures must be kept above 50°C for a few hours to be sure the pathogen is killed.
- » **The pathogen lives a long time.** In 2015, scientists at Plant & Food Research

re-tested soil samples containing *Phytophthora agathidicida* that had been in storage since 2010. These tests showed that the pathogen was still active in the soil samples some six years after they had been collected. Those spores are still alive today and, if reactivated by water, have the potential to help kill a 1000-year-old kauri. That's why it's so important to clean your footwear and other gear not just as you are entering an area with kauri, but also as you are leaving – for instance, the pathogen could live long enough on your shoes to infect the next area you go into. We also know that only a very small amount of soil – i.e. a pinhead – is enough to spread the disease.

While the Programme's research work has come a long way, there's a lot of work still to be done including building on our understanding of where it is, and where it isn't, and finding out where *Phytophthora agathidicida* might have come from (the latest research has found a very similar species in New Caledonia).

However, because some infected trees don't show any symptoms of the disease for a long time, it's impossible to say conclusively that a particular area is free of the disease. That's another important point to remember: if people assume the trees in one area are 'clean', and they don't clean their gear after visiting kauri in that area, there's a high risk they could be responsible for spreading the disease. That's why we've all got to clean every time, coming and going – no exceptions.

As you read this edition of *KauriKonnnect*, you might be

struck by just how formidable the task of preventing the spread of kauri dieback is. And you're not wrong. But there is plenty of good news too. As small, tough and 'intelligent' as it is, the pathogen that causes kauri dieback is for the most part reliant on those bipedal animals that are found everywhere across the upper North Island – humans – to get around. If everyone cleaned their gear, stuck to the track, fenced off any kauri growing on their properties so that stock could not walk amongst the trees, and ensured any equipment coming onto or leaving their properties was clean, the spread of the disease would be severely curtailed.

Getting everyone to 'do the right thing' by kauri might seem like an impossible hope, but we know there's no shortage of people who are determined to save kauri ecosystems from *Phytophthora agathidicida*. When the research company Colmar Brunton surveyed 1200 people living in the Waikato, Auckland, Northland and Bay of Plenty regions earlier this year, more than 40 percent of respondents who described themselves as forest users said they had asked others to take action to prevent the spread of kauri dieback in the previous 12 months. That's a great result, because it's going to take the whole community to help save our kauri – not only by not spreading the disease, but also by spreading the word – at school, the dinner table, on social media, and in the forest. So, the next time there's a lull in the conversation, or you see someone not cleaning their gear, make sure you speak up – politely and positively – for kauri.



Staying in the kauri loop

Interested in getting the latest research news, great kauri photos, and updates on the fight against kauri dieback?

Just go to the **Kauri Dieback Programme's Facebook** page, 'like' it, and you'll start enjoying updates on these topics and others, via your Facebook news feed.

Chinese Conservation Education Trust gets a boost to its kauri dieback work

LAST YEAR we announced that the philanthropic Tindall and Aotearoa Foundations had granted \$480,000 over three years to help protect kauri on private land, and to help community groups enable their communities to protect kauri.

One of the community groups the Programme has now partnered with is the Chinese Conservation Education Trust, which is advocating amongst Chinese New Zealanders and visitors from China to help stop the spread of kauri dieback.

The agreement between the Programme and the Trust was launched at an event at Auckland City's

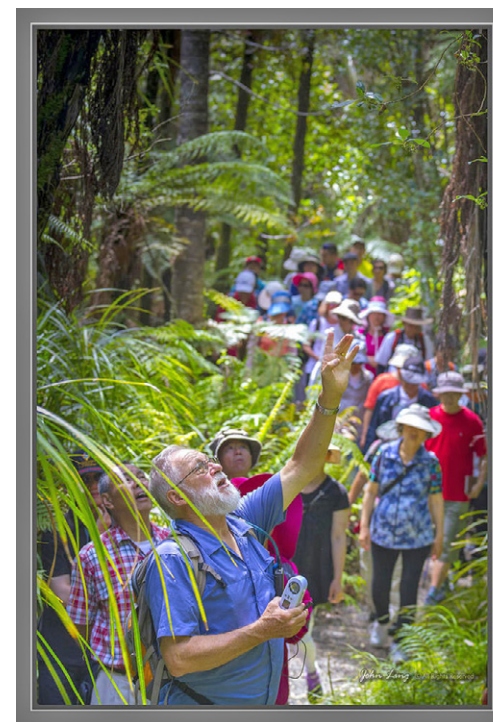
Arataki Visitors' Centre in the Waitakere Ranges.

The Trust's work under the partnership has included field trips, festival stalls, and an art competition – some of the winning pieces are on the following page as is the Trust Chairperson Estella Lee's account of their work so far.

More partnerships with community groups will be announced in the near future. Meanwhile, agreements with several private landowners have been reached which will see significant stands of kauri fenced off from stock.



Above: Conservation Minister Maggie Barry (centre, blue jacket) standing next to Chinese Conservation Education Trust Chairperson Estella Lee (orange jacket) at the launch of the partnership between the Programme and the Trust. Photo: Laura Goudie.



Photos from a CCET field trip into the Waitakere Ranges, led by Forest & Bird member John Staniland. Photos: John Ling.

How the Chinese Conservation Education Trust is using the Tindall and Aotearoa grants to support Chinese New Zealanders and tourists from China to help prevent kauri dieback

By Trust Chairperson Estella Lee

THE Chinese Conservation Education Trust (CCET) has been aware of the problem of kauri dieback since 2009, and about how the Chinese should learn about the problem, and help stop its spread.

But because of a lack of funding between 2009 and 2015, the CCET had only been able to do two Chinese newspaper articles, and organise two trips to take the Chinese out to see the problem.

Thanks to the money granted by the Tindall and Aotearoa Foundations, CCET has been able to do two road shows, six newspaper columns, a TV news interview, six field trips, two kauri talks and a photo and drawing competition, all on the issue of kauri dieback. Though CCET's work has not yet finished, the response has been overwhelming. Surveys show that those who had joined in on the CCET's field trips understand the problem better, and are willing to help prevent the spread of kauri dieback. Many participants said the trip gave them a lot of information, and that there should be more educational trips so that more Chinese know about the problem, and how they can help. There were also more than 100 entries into the photo and art competition.

Given there is no cure for kauri dieback, preventing the disease from spreading is vital. Education is the key to making people understand and help.



Ms Estella Lee, CCET Chairperson.



A CCET field trip to Parry Kauri Park, near Warkworth.



Jia Rong Zheng, with his category-winning drawing in the CCET Kauri Dieback photo and art competition.



Andrew Lim, with his category-winning entry into the CCET art and photography competition.

What you need to know

- » **Mt Manaia Sanctuary**, on the Coromandel Peninsula, has been closed by the Department of Conservation as a proactive measure to protect kauri from kauri dieback.
- » **The Logues Bush Scenic Reserve**, 11 kilometres north-east of Wellsford, has also been closed by DOC to reduce the risk of kauri dieback spreading from infected trees in the reserve.
- » **The Taheke Scenic Reserve** near Whangārei has been closed so that the track through the reserve can be upgraded, to reduce the likelihood of users spreading kauri dieback (more details in the Department of Conservation story below).

Update from the Department of Conservation's Kauri Dieback Recreation Project

DOC starts on the ground work for Recreation Project

DOC HAS BEGUN its programme of upgrading tracks to help prevent the spread of kauri dieback, with the Taheke Water Fall track in Whangārei the first of approximately 200 tracks in a number of DOC reserves being upgraded.

To protect the public and kauri in the reserve, the Taheke Scenic Reserve will be closed while contractors complete the upgrade. DOC is planning to reopen the reserve before spring after the work is completed.

A DOC national kauri dieback team identified wet and muddy sections of the track where there is a risk of track users spreading kauri dieback spores in mud on their footwear. A range of work will be done on the Taheke track to mitigate this risk. This includes installing boardwalks and Geowebs (which serve as a foundation for resurfaced tracks, keeping the tracks dry and protecting any roots beneath the walkway) to make wet and muddy sections of track dry and

mud-free. As part of the upgrade some sections of the Taheke track will be re-routed, and steps will also be installed.

The event was marked with an official 'closing' of the reserve and blessing of the work. Local iwi, community groups, conservation board members, NZ Track Works contractors and people close to the project all attended the event.

Other DOC tracks will be temporally closed while they're upgraded. The next tracks to be upgraded this year will be in Whangārei, the Bay of Islands and Auckland. The public will be informed of these temporary closures. There will be signs at the tracks and temporary closure notifications will be posted on the DOC [website](#).

DOC plans to run similar events to mark the start of work in each district.

Tracks in other areas will be upgraded during years two and three of the project.

Kauri dieback ... and rain

Now that we're into winter, we all need to be extra careful about cleaning our gear before and after going near kauri, not standing on kauri roots, and avoiding going off track. Why? Because *Phytophthora agathidicida* is a type of water mould, and its life cycle depends on water. And of course as we already know it's a lot harder to clean soil off your gear when it's in the form of mud but that said, it's still all got to go! As always, show others what you're doing to help stop kauri dieback from spreading, and share this information in your networks too.



Photo: Laura Goudie.

Cleaning stations

LATE LAST YEAR, the Department of Conservation began installing prototype kauri dieback cleaning stations on four tracks around the upper North Island:

- » the Puketi Nature Trail (in the Bay of Islands)
- » the Te Haua Uru Track (Whangārei)
- » the Kauri Walks Track (Waipoua Forest), and
- » the Matamataharakeke Walk (on the Coromandel Peninsula).

The stations are a radical departure from the current dieback cleaning stations. Amongst other things, they've been likened to milking sheds. But they were designed for a very specific purpose... supporting track users in cleaning and disinfecting their footwear both before and after using tracks, particularly where there are large numbers of people. Users' cleaning activity was monitored with cameras before the prototype stations were installed, and then for a week after. In the second part, the camera footage was augmented with face-to-face interviews.

During this process the track users at the four sites were categorised into four groups: those who used both the brushes and the disinfectant; those who only used the brushes; those who only used disinfectant; and those who did not clean at all.

Remarkably, the average number of users who did everything necessary to prevent the spread of kauri dieback reached 97 percent after the prototype stations were installed. Obviously the three percent of people not cleaning their gear properly is three percent too many, but the results do prove that good design can go a long way in helping people to do the right thing around kauri.

Work will soon begin on designing a second generation of stations, which will incorporate the lessons learnt from the prototypes.



A standard cleaning station. Photo: Zoe Lyle.



One of the prototype cleaning stations, at Te Matua Ngahere in the Waipoua Forest.



Most people do the right thing.



News from the Coromandel

THE COROMANDEL KAURI Dieback Forum was busy this last summer, getting the word about kauri dieback out to all the locals and the many thousands of visitors who holiday on the Peninsula. The Coromandel Kauri Dieback Forum is a trust that advocates for the prevention of kauri dieback on the Coromandel Peninsula.

It was all hands to the pump over summer with volunteers distributing brochures and posters to accommodation providers and visitor information centres and attractions down as far as the Kaimai Ranges. The Forum also distributed an insert designed for guest compendiums in rented baches, motels and B&Bs, with practical hints for visitors to the Peninsula on how to prevent the spread of dieback.

The Forum's activities also included a two-week



One of the Forum's billboards, at the top of the Whangapoua Hill.

advertising campaign on local radio stations and press as well as signage for key tracks in the region. With the Forum's billboards now erected at all three gateways to the Peninsula and on major touring routes, it's hard to miss the dieback message.

A call from the Kauri Dieback Programme saw the Forum sourcing people to help with two initiatives – the prototype cleaning station trial at the Matamataharakeke Walk (near Waikawau Bay) and the track ambassador pilot project at the Waiau/309 Kauri Grove walk.

Both initiatives provided some excellent data, and we were glad to be of assistance. We were also proud of the fact that of those spoken to by Track Ambassador Sara Smerdon, it was Coromandel locals who knew the most about kauri dieback. Sara reported that some people had heard of kauri dieback through reading an in-flight magazine and others by watching a video on the ferry that services the Coromandel. Many visitors also commented favourably (unprompted!) on the Forum's billboards. The word is certainly getting out there to locals and our many visitors.

This year is going to be busy for the Forum with several initiatives planned, including a marae-based public forum; a second series of workshops for the tourism and accommodation sector; working with Peninsula Enviroschools to explore ways of incorporating dieback into the curriculum, and the Forum's trackside survey to measure awareness, knowledge attitudes and behaviour around kauri dieback, funded by the Waikato Regional Council's Environmental Initiatives Fund.



Track Ambassador Sara Smerdon (in white shirt) watches as visitors clean their gear at the Waiau/309 Kauri Grove walk.

Kauri take centre stage

NORTHLAND FIELD DAYS is the perfect opportunity for the regional council to highlight important environmental issues. Kauri dieback took pride of place this year, with a miniature kauri forest springing up in the middle of the Northland Regional Council (NRC) site. Biosecurity staff members Graeme Weavers and Kane McElrea were onsite to answer questions and provide advice to the public about how they can prevent

the spread of kauri dieback and protect our precious kauri trees. Over 2000 people visited the NRC site where the kauri dieback display attracted a lot of attention and positive comment. The display included a functioning wash station where people could put into practice the directive to clean their footwear on entering and leaving a forest. Over 330 kauri dieback cleaning kits were distributed over the three days.

One of the visitors to the Northland Regional Council's stand at the recent Northland Fielddays pledges to do her bit for kauri dieback.



As well as the **track ambassador** on the Coromandel, there have been track ambassadors positioned at Tane Mahuta in the Waipoua Forest since late last year. Te Roroa, whose rohe includes the Waipoua Forest, was contracted by DOC to provide three people – Vanessa Rapira, Shavez Tuake-Nathan and Deidre Nesbit – who engaged with visitors and advocated for the prevention of kauri dieback. On some days they would speak to 500 visitors. The contract finished at the end of May; there are plans to have ambassadors stationed at the site again once summer returns.



Above: Vanessa Rapira (left) and Shavez Tuake-Nathan (seated on rail) in the process of having their photos taken for a *Northern Advocate* story about their work.



Photo: Zoe Lyle



Kauri dieback is killing our forests



It can be spread
with just a
pinhead of soil.

WWW.KAURIDIEBACK.CO.NZ

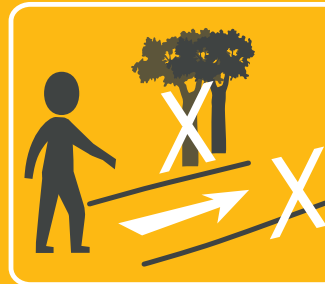
TĀNGATA WHENUA | MINISTRY FOR PRIMARY INDUSTRIES | DEPARTMENT OF
CONSERVATION | NORTHLAND REGIONAL COUNCIL | AUCKLAND COUNCIL
WAIKATO REGIONAL COUNCIL | BAY OF PLENTY REGIONAL COUNCIL



**1 Clean ALL soil off your
footwear and other gear
EVERY TIME you ENTER or
LEAVE a forest.**



**2 Use disinfectant only
after you have removed
all soil.**



**Stay on track and off
kauri roots.**

The Kauri Dieback Programme thanks the following partners for their support

If you'd like to help spread the word about kauri dieback to your customers, staff and networks then please contact Ian Mitchell on **029 894 0773** or email **imitchell@doc.govt.nz**.

Coopers Creek

Coopers Creek 'Lone Kauri' brand is an iconic Kiwi wine that has lent its support to the Kauri Dieback Programme. In an innovative messaging alliance, every Lone Kauri bottle helps raise awareness of kauri dieback and what we can all do to stop its spread. They are distributed throughout the Upper North Island and into Asian markets. We feature on their website and Facebook pages and promotional material at tastings, events and point of sale is also helping to spread the word. Cheers Coopers Creek!



Soar Print

As an environmentally sustainable printer, Soar Print are putting their money where their mouth is by providing a generous printing sponsorship to the Kauri Dieback Programme. We're proud to join their portfolio of community programmes which help good things happen.



Bivouac

Thanks Bivouac for getting the kauri dieback message to all your intrepid outdoorsy customers on your Facebook page. We really appreciate you letting us use your communication channels to raise awareness and encourage kauri-safe behaviours in the forest.



SHARE THE NEWS. Got a story to share on kauri dieback? Spread the word in *KauriKonnnect*.

Contact **jay.harkness@mpi.govt.nz** to pass on any news, updates or articles and photos.

If we all contribute we'll make this newsletter even more relevant and interesting!