KauriKonnect 21

KEEP KAURI STANDING
STOP KAURI DIEBACK DISEASE SPREADING WWW.KAURIDIEBACK.CO.NZ

PASS IT ON.
Please spread the word by sending this newsletter through your networks via email or print off hardcopies to pass onto those you meet.

Are you new to KauriKonnect? Email nick.farland@maf.govt.nz to register on the database and you'll never miss a copy.

"There's no such thing as bad publicity"*

Phineas T. Barnum, 19th century American showman, circus owner and shameless self-promoter

Germaine Greer's opinion piece in the *Listener* certainly put the cat amongst the pigeons, didn't it!

While it suffered from technical errors and a lack of research into the kaupapa in general, and our programme specifically, the article did help get the issue back on the public agenda. We are extremely grateful for this outcome. We need this kind of concern to generate conversations and action within the community.

The *Listener* reaches into many households. It's been around for over 70 years and is New Zealand's biggest selling current affairs magazine with almost 300,000 readers each week. It promotes itself as appealing to an intelligent and influential audience.

The article (see over page) gave us the platform to respond about the programme and reinforce the messages around what forest users can do to help stop the spread of kauri dieback. We deliberately stayed away from getting into the complex scientific story and getting into the technical detail of the rights and wrongs of her article. While it's crucially important to us, intricate science can be very confusing to the public. So, in our response we thought it was best to simply repeat the preventative actions people can take, outline the successes of the programme so far and also cover the ongoing activity.

http://www.listener.co.nz/

* Check out **http://www.phrases.org.uk/meanings/there-is-no-such-thing-as-bad-publicity.html** for background to this quote and Oscar Wilde's similar sentiment of "The only thing worse than being talked about is not being talked about"... and Irish Republican writer Brendan Behan's "There's no such thing as bad publicity except your own obituary".


GLOBAL TREE CRISIS

Kauri killer

An obscure pathogen attacking our iconic native tree is proving 100% lethal. BY GERMAINE GREER

Germaine Greer's opinion piece featured in the *Listener, January 28–February 3 2012.*


UPFRONT

Letters

Location's price

KAURI DIEBACK

LETTER OF THE WEEK

Chairman of the Kauri Dieback Programme Leadership Team, John Sanson's reply in the *Listener's* Letter to the Editor section.

Letter to the Editor response

Germaine Greer's opinion piece on the plight of the kauri highlights the devastating impact of kauri dieback disease. There is no doubt it is killing our majestic taonga of all ages – from young saplings to those that are hundreds of years old. There is also no doubt that all forest users can play their part in stopping its spread.

Kauri dieback (or PTA) is a soil borne pathogen, so removing soil from footwear, tyres and equipment both before AND after forest visits is the one thing everybody can do to help protect kauri.

Everybody must play their part if this is to be successful – walkers, trampers, bikers, hunters, tourists and locals alike. Other measures like fencing off areas to stock, culling wild animals and restricting human access are also being implemented on a case by case basis.

Since 2009 the Ministry of Agriculture and Forestry, Department of Conservation, Auckland Council and Northland, Waikato, Bay of Plenty Regional Councils and tāngata whenua have joined with landowners in a coordinated programme to respond to the disease.

Research is underway to improve detection methods, increase our knowledge of how the disease spreads and develop effective control methods. Trials involving the use of phosphite to treat the disease have shown promising lab results and field tests are about to start. Work is also going into improving track construction, drainage and other man-made influences that will help reduce the spread of the disease.

We ask that all forest users play their part in helping keep kauri standing.

To spread the word, rather than the disease, you can access more information at the programme's website – www.kauridieback.co.nz.

Yours sincerely

John Sanson

Chairman, Kauri Dieback Programme Leadership Team

John Tamihere *Think Tank*

Another spin-off from the *Listener* coverage was an invitation to appear on TV3's current affairs programme *Think Tank*. The programme is a panel discussion seeking to identify solutions to topical problems. It's hosted by John Tamihere, who has a fascinating history as CEO of the Waipareira Trust (an organisation providing assistance for urban, non-marae-affiliated Māori around justice, social services, education and health), a Member of Parliament and an occasionally controversial talkback host. Kauri dieback got on their radar as a result of the *Listener* article.

The programme is scheduled to appear soon after the season starts on 23 March.

We were able to stack the panel with a strong representation – including Dr Nick Waipara and Ian Mitchell to speak to the science and community mobilisation of the programme and fellow Planning and Intelligence team member Will Ngakuru, who is a member of the Tāngata Whenua Roopū, supporting both his colleagues and his Te Roroa kaumatua, Dan Ambler. Sandra Coney (Auckland Councillor) also appeared.

The format of the programme was basically in three parts, firstly to outline the problem as we know it, describe the value of the kauri to the kiwi culture and psyche and then to discuss and brainstorm the potential solutions. The panel covered the need for vision and long-term strategy around the problem, the need for us to keep the communications alive within the agencies and communities. Matua Dan put forward strongly the idea of Rāhui for Waipoua, and included the idea of 'resting the land' at different times and at different places. This may add some further spice to the debate. The team also had the pleasure of bumping into Winston Peters and Dame Iritana Tawhiwhirangi who were scheduled for another panel on the same day of filming.

http://www.tv3.co.nz/Shows/ThinkTank.aspx
http://www.waipareira.com/

In the Studio: John Tamihere leads discussion with (from left) Dan Ambler, Sandra Coney, Nick Waipara, Will Ngakuru and Ian Mitchell.

Kaitiaki Konnecting

'Great hui, great venue, great kai' pretty much sums up the second Kāhui Kaumātua wānanga attended by nearly 30 people at Motatau Marae on 1–2 February. It is said, "ko te kai a te rangatira, ko te kōrero – the food of chiefs is conversation" and hui attendees were extremely well fed both mentally and physically over the two days. Many thanks to the whānau of Motatau Marae and Ngāti Hine for hosting the wānanga. Ka mau kē te wehi! Awesome!

This was the second wānanga, with the first one being held in December last year. The purpose of the wānanga series was to update kaumātua on progress with the management and response programme, disease knowledge, and also to get an idea from kaumātua how they wished to inform or be involved in the long-term response and management. One Tāngata Whenua Roopū (TWR) member noted that the "depth of kōrero from kaumātua was incredible".

Hui attendees shared this view with discussion that traversed many aspects of kauri forests, Māori connectedness with the forests, the place of mātauranga Māori (Māori knowledge systems) in managing and responding the PTA, and the critical role of kaumātua in the management and response. TWR members were heartened that kaumātua in attendance were very supportive of TWR activity to date and the way in which tāngata whenua are able to interact with and be involved in the long term management programme.

Kaumātua konnecting, Motatau Marae.

"We have seen common themes throughout kauriland, and these were further confirmed at the wānanga," says TWR Chair and a lead team representative, Hori Parata (Ngāti Wai). "However, kaumātua stressed that, while there are shared ideas and perspective, each mana whenua group has its own unique relationship with kauri. Kaumātua support mana whenua determining their own direction and interaction with the management and response to PTA. This included kaumātua noting that the use of rāhui (restrictions of access) belongs solely to mana whenua of a rohe (region)."

Kaumātua hope to see an annual hui held within kauriland that gives TWR an opportunity to update kaumātua on management and response activities in the preceding year. At this hui, kaumātua also want TWR to provide a proposed plan for the coming year for kaumātua comment, amendment, and support.

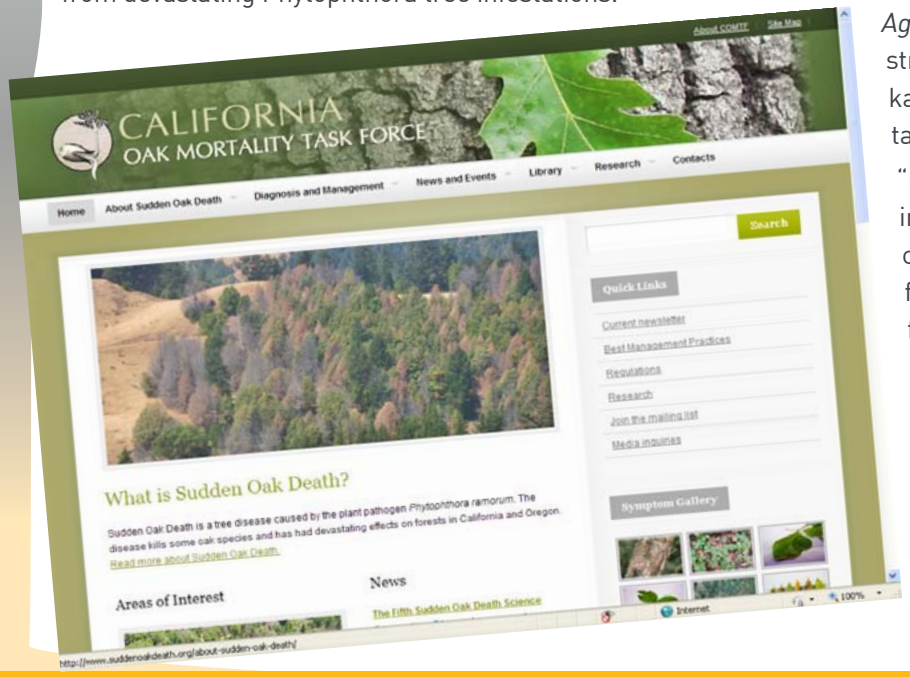
Waitangi Wood (Ngāti Kahu ki Whāingaroa), a TWR lead team representative, stressed, "Despite the support from kaumātua for our activities to date, we are not sitting still. We are keen to make further progress this year and plan for another year in 2012/13 that sees us moving further towards effective management and response. We have laid some foundations in the area of Cultural Health Indicators for kauri and we are keen to see what relationships may exist between these indicators, kauri ecosystem health, and PTA. We are hopeful that the indicators will show the way or contribute to encouraging kauri resilience or even resistance to PTA."

Tāngata/Mana Whenua groups that would like to be included on emails regarding TWR meetings, or are interested in registering their representative as a TWR member can contact the **TWR secretary, Tipene Wilson** on **tipene@maximize.co.nz** or **021 476 645**.

We are not alone

Recently Susan Frankel popped up on our radar by requesting to go on the KauriKonnect subscriber list. An international connection was revealed when we contacted her to find out what her interest in kauri was. Katharine Palmieri of the California Oak Mortality Task Force, University of California, Berkeley has taken the time to drop us a line on their work and the link with Susan.

A century ago, San Francisco and Auckland were linked through the use of kauri wood, as both cities relied on it for building homes. Today these areas are once again linked, as both face similar impacts and challenges from devastating Phytophthora tree infestations.



Susan Frankel, the Sudden Oak Death research lead for the U.S. Forest Service, Pacific Southwest Research Station in California, has had over 10 years of experience with *Phytophthora* ramorum impacts in California (the sudden oak death pathogen), but had not seen kauri dieback until 2010 at Cascade Kauri, Waitakere Ranges Regional Park, during the Fifth Meeting of Phytophthora Diseases in Forests and Natural Ecosystems Work Group field trip. The international group of scientists investigating forest Phytophthoras met Louise Mason and Councillor Sandra Coney, Auckland Regional Council, and heard about the concern over *Phytophthora* taxon *Agathis* (PTA). During the tour, Frankel was struck by how similar the fight to save the kauri is to California's battle to protect tanoak and oak hit hard by P. ramorum.

"Like Kauri trees in New Zealand, oak trees in California (USA) have been prized for centuries. Now both tree types and the forest ecosystems within which they are found are threatened by Phytophthora pathogens. The loss of these trees means loss of the natural beauty of the landscape, loss of the cultural heritage they support, and loss of wildlife," observed Frankel.

Over the past decade, more than 3 million tanoaks and oaks in the greater

Newsflash

Get on your (clean) bike!

» Mountain biking is a popular activity within the Hunua Ranges, which have a range of tracks for all skill levels. However, like any equipment that can carry soil, mountain bikes can pose a risk of spreading kauri dieback if not cleaned between areas of kauri.

With the help of the Auckland Mountain Bike Club, Auckland Council park rangers have just completed construction of a **prototype mountain bike clean-down station** in the Hunua Ranges Regional Park to prevent the introduction of this disease into 'healthy Hunua". It has been designed for both trampers and cyclists. Informational signage is yet to be erected, but it is hoped that cyclists will find this station easy to use and effective in removing soil before starting their rides from the Upper Mangatawhiri camp ground.

Removing soil from bikes – another way forest users can help.

» **We are not alone** continued

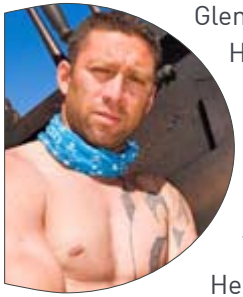
San Francisco Bay Area have been killed by *Phytophthora ramorum*, a relative of PTA. The pathogen is known to infect over 130 plant species, but primarily only kills oaks and tanoaks in California. Like PTA, the pathogen was new to science when first discovered in 2000.

In California, a collaborative, cooperative effort to combat sudden oak death is being championed through the California Oak Mortality Task Force (**COMTF – www.suddenoakdeath.org**). Made up of government and non-government agencies, industry representatives, and private individuals, the COMTF brings together experts from disparate disciplines in an effort to implement a comprehensive, scientifically sound approach to addressing SOD-related issues. The COMTF is also committed to education and outreach through professional and scientific meetings; training sessions for the public, homeowners, land managers, and professionals; education and outreach materials; distribution maps; management guidelines; best management practices; and much more.

Like the Waitakere Range surrounding Auckland, *P. ramorum* infests popular hiking trails as well as native tribal gathering areas. Tanoaks are culturally significant and sacred to many of California's Native American tribes. These tribes rely on acorns for food and ceremonies and consider these trees to be members of their family.

"Having been involved with sudden oak death for over 10 years, it's clear that cooperation among affected parties in addition to rapid detection and response to new outbreaks is key to maximising the odds of successful pathogen containment and eradication. Hopefully kauri dieback can be aggressively attacked early so kauri tree forests can continue to thrive, allowing this magnificent tree to be around for generations to come," concluded Frankel.

TV star, ex-All Black, pig hunter, guitar player, he tangata whakakatakata* and now... Kauri Ambassador



Glen Osborne has a big personality and widespread exposure in the media. He's someone who has earned the respect of many Kiwis – particularly those who love sport and the great outdoors. What you may not know is that Glen is playing a key part in Auckland Council's efforts to reduce wild animals and therefore their role in spreading kauri dieback. Glen started back in 2008 and remains one of the three teams contracted to cull pigs from the Waitakere Ranges.

He is a passionate supporter of the kauri dieback kaupapa and has volunteered his services to appear in an informational DVD being prepared by Katherine Mabbitt (NRC) and Ian Mitchell (Programme Relationship Manager). The 10-minute DVD explores the science and background of kauri dieback and what forest users can do to help. There will also be a shorter version suitable for events and presentations. Glen's charisma and credibility will certainly help to reinforce the message to hunters and forest users in general. Chur 'bro.

* a hard case, someone who makes people laugh.

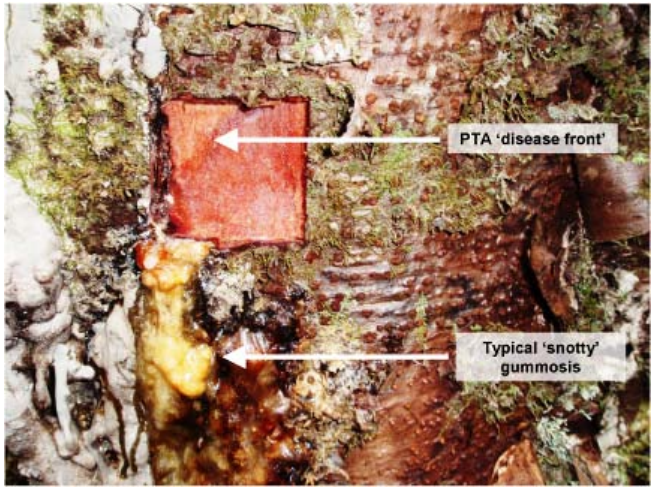
Where in the wood is PTA?

Can you help Monique Wheat, Research Associate – Kauri Dieback Joint Agency/Auckland Council – who is undertaking a research project requiring access to felled kauri that is affected by kauri dieback? She outlines her work below:

Can the good quality kauri timber from dying and dead kauri (*Agathis australis)* be harvested, culturally and/or commercially? No, this timber can not be harvested. Under current standard operating procedures timber from any kauri affected by kauri dieback (or not), that needs to be removed from a site must be sent to landfill or burned. If a felled kauri does not need to be removed from a site, the felled log must be left in place. Such a precautionary approach has been taken because it is assumed that all of the kauri timber is infected by the kauri dieback disease and there is a biosecurity requirement to limit the spread of disease to other sites from the felled kauri timber. The organism that causes kauri dieback is *Phytophthora* taxon *Agathis* or PTA.

Current scientific knowledge on where the PTA organism is in the wood of kauri is limited. The late Dr Ross Beever, an expert on kauri dieback, suggested from his research that the PTA is unlikely to be found throughout the timber of kauri, nor in the canopy, foliage, cones or seeds. It has been identified that knowing where PTA is in the wood of kauri is a major research priority, as determined by the Kauri Dieback Joint Agency Response Programme leadership team.

With help and support from the Auckland Council I am undertaking research to determine where in kauri wood PTA can be found. The research has three main aspects. Firstly, how far **up** a kauri can PTA be found – is it in the upper trunk, in the canopy branches, leaves seeds or cones? Secondly, how far **in** kauri wood can PTA be found – is PTA just below the bark (see illustration), can PTA be found in the sapwood or even the heart wood? The third aspect of the research is to provide guidance to policy makers to help determine the best hygiene methods to limit the spread of kauri dieback, including from pruning and tree removal procedures.

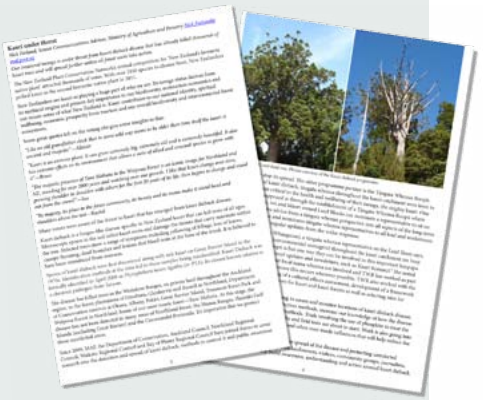


The trunk of a PTA affected kauri tree, showing an advancing PTA 'disease front' below the bark of a freshly bleeding 'snotty' lesion. This kauri was permitted for research activities.

Newsflash

Spread the word, not the disease

» The New Zealand Plant Conservation Network provided another forum for us to spread the word on kauri dieback. As a result of their recent public competition to name New Zealand's favourite plant (where kauri got to number 2 on the hit parade) they invited us to submit an article for their readers. These passionate advocates will help pass on our messages through their networks.



Kauri Care Guide revamp

» The ever-popular *Kauri Care Guide* was one of the first programme resources to be developed. It was so early that it missed out on the Keep Kauri Standing brand, which was developed later on. So, we've taken the opportunity to remedy that and also reprint the bumper stickers in a larger size so they are mini-billboards as they whiz around on cars, trucks, vans, bikes, school bags and whatever else they end up on.

Posters in English and Te Reo are also available in A1, A2 and A3 sizes along with brochures, tote bags and promotional lollies. These resources can be ordered from the E&BC team members.

» Where in the wood is PTA? continued

The research will require a number of felled diseased kauri to be thoroughly examined and samples of wood to be analysed in the laboratory. This examination will include taking samples of bark near bleeding lesions and samples of wood from behind the bleeding lesions, to see how far PTA can advance from a lesion. Not all wood samples examined will be from felled kauri. A number of affected kauri will need to be climbed, to take minimally invasive samples from the upper trunk, upper branches, leaves, seeds and cones. These samples will also be processed in the laboratory and examined for the presence of PTA.

The research will provide quantitative scientific data to enable the current kauri tree removal and pruning procedures to be updated and provide best practice guidelines for cultural harvest or safe disposal of kauri timber. Importantly, more will be understood about how to limit the spread of kauri dieback.

For offers of arboriculture assistance or further enquiries on the research *"Where in the wood is PTA?"* please contact Monique at **monique.wheat@auckland.council.govt.nz**

National day. National treasure.

Waitangi Day celebrates our historical past and our current state as a nation. While events occur around the country, eyes tend to focus on what happens with the political leaders and activists on the Treaty grounds where the Treaty of Waitangi was signed in 1840, as well as events on the Te Tii Marae and Tii Beach.

More than 25,000 people attended the celebrations this year. To capitalise on this crowd, the Department of Conservation Bay of Islands Area Office joined forces with the Waitangi Trust and put on a display called "Nature's Best!"

Part of that display was a section on kauri dieback – complete with live, uninfected kauri rickers grown from seed by the Kerikeri Shadehouse Volunteers, a mocked up boardwalk over kauri roots and a "clean your boots here" station. The display generated a lot of interest amongst the local residents and visitors from New Zealand and overseas.

http://www.waitangi.net.nz/waitangi-day/index.htm

Newsflash

Forest & Bird volunteers

» Tapping into the networks of others is one of the ways the programme can harness additional manpower. We gratefully acknowledge the assistance Forest & Bird members are providing in maintaining cleaning stations on Auckland's North Shore.

An open letter

Actively listening to criticism or questioning is a valuable way to learn about the needs of our audiences. We recently received a query from within Auckland. It came via the kauri dieback website and took us to task on the programmes in general, about the focus on 'human vectors' and track closures in particular. The programme's Planning & Intelligence team led the response.
Read through it as it includes some valuable information about the "whys and wherefores" of our activities.

Original enquiry:

I am interested to know the science behind getting walkers to spray their shoes, etc.

It seems to me that a huge amount of money has been invested in this and it defies all logic that the solution you have come up with will do anything to change the process.

What about the birds and other wildlife, are you suggesting they don't carry it?

Why are tracks being closed down when the disease is well established (trees have looked liked this for at least 10 years). Those trees are not going to suddenly turn around... or are they? What is the science please?

There is a large group very concerned by the lefty controlling nature of this campaign.

Programme response:

Greetings [name removed]

I have taken the opportunity to share your concerns with the wider programme team, including our science and biosecurity experts.

From the tone of your note I'd imagine we may end up agreeing to disagree, as it seems you have some strong views that are contrary to ours... but thanks for the chance for us to share our perspective and listen to yours. It is genuinely appreciated.

Firstly, we see the programme as community mobilisation. Only by working collaboratively with our various stakeholders will we have a chance to stop the spread of the disease.

There is no single agent or vector involved and no single solution, so the programme is encouraging a number of activities based on science to date and continues to adapt as that knowledge evolves.

The spraying is designed to help remove soil from footwear and equipment, as the science indicates the pathogen is soil borne. Remove the soil and we remove the risk of transporting the disease from site to site. So, getting widespread awareness of the issue and getting people to do what they can – particularly forest users removing soil from their gear before and after visits – will help. Hence the focus on the human aspect that can be managed.

Yes, livestock and other animals, etc. can spread it. If they can carry soil, they can carry the disease.

Efforts are going into addressing that.These generally require restricting access (fencing areas so stock can't impact on it) and/or working with the humans who can help (restrain dogs, cull wild pigs, etc.)

As for the issue of track closures. One of our team provided the following:

Track closures are implemented for a number of reasons:

- Protect high value healthy kauri in high risk periods of disease spread (wet warmer months when kauri dieback is active and tracks are muddy).
- Close tracks with high levels of disease so that people are not moving the disease out to other healthy areas.
- So our temporary track closures are undertaken for both protection of healthy trees or containment of disease within sick trees.
- We primarily close tracks where there are alternative tracks for the public to use and to get from A to B. We have not closed any tracks on high profile routes, e.g. Auckland City Walk and Hillary Trail.
- The primary vector of kauri dieback within Waitakeres Ranges is via track network; recent research has found 70% of infected trees have root zones in close proximity to tracks where human mediated soil movement are vectoring

» An open letter continued

soilborne spores along the tracks onto kauri root zones. While we do acknowledge the potential for other vectors to spread the disease, our data to date shows unequivocally that this disease is closely correlated to soil movement along track. Phytophthora has been isolated from soil on tracks, dirty footwear and tyres. Therefore track management is critical in slowing and containing the disease.

» Yes, some of these trees have been sick and dying for a long time (10–20 years) but our data shows the disease is also moving and spreading to new infection sites and to adjacent healthy trees from these older sick trees. So it is critical that all disease zones (new and old) are managed. While it may seem this disease is slow in its action, we have data that shows juvenile and ricker (regenerating) trees can be infected and killed within 5–10 years. This is a relatively rapid and virulent mode of action considering the life of a mature kauri tree should be 700–1000 years (to be killed within a decade is fast for a kauri tree's normal life span).

» Data from Waitakere, Northland and Great Barrier Island show that if this disease is left unmanaged and untreated, it will continue to advance and infect healthy trees. Currently we have no research to indicate if all trees are susceptible to this disease, Or, if there is natural resistance within the kauri population? Therefore until our research answers this via a long-term study, our management will have to be precautionary and preventative.

» Data from Great Barrier Island also shows this disease will move naturally on its own (up to 3 metres per year), so we accept our management will only be able to SLOW this spread. But it essential to slow and temporarily contain the disease while our research programme can catch up with new knowledge and science to assist and modify our management. Some of these tracks closures and vector control are interim measures and will not necessarily remain in place if our science improves our understanding, In the meantime our management will remain preventative.

» Research into other vectors (feral animals, etc.) is ongoing and as we obtain answers from this research we will incorporate these findings into our management programme. To date we no evidence of spread via birds, insects, small animals (e.g. rodents) but accept they could present a low risk (low because the volume of soil these creatures move is relatively limited and small compared to large animals and cumulative volume of soil via thousands of visitors per annum on a track). We DO have preliminary evidence of spread via feral pigs, which are a declared pest in the Waitakere Ranges (refer Auckland Regional Pest Management Strategy 2007–2012). Feral pigs are being actively culled to remove these potential vectors from the forest as well. There are no other large animals, e.g. deer or goats within the park.

I trust this all helps explain the programme to date and has gone some way to reassuring you that the programme is a sensible response to a particularly devastating disease. It is science based, but in light of incomplete knowledge we must err on the side of caution and therefore prevention.

All I can ask is that you continue to raise awareness of the disease within your networks and encourage people to do what they can to stop its spread.

Planning & Intelligence – a recap

The programme's Planning & Intelligence team is responsible for building knowledge around the detection and spread of kauri dieback, as well as methods to control it. They also provide scientific and technical advice to the leadership team, plus support the design of operational activities and programme planning. The team's activity was outlined recently (see article in *KK19*) and it's timely to revisit important work that is underway.

Results from the first round of **soil surveying** were available late last year – this included 96 samples from 15 sites with known history and/or indicative symptomatic trees. Six sites had positive results and tāngata whenua and land owners have been involved in a consultative process for some sites to identify risks and develop a management plan. So far risk assessments have been completed at Glenbervie (which had 3 infected sites), Punaruku, Omahuta and one at Great Barrier will occur shortly.

Aerial surveillance to survey all kauri forests for visible signs of kauri dieback is also scheduled. Tenders for undertaking this activity are currently being assessed.

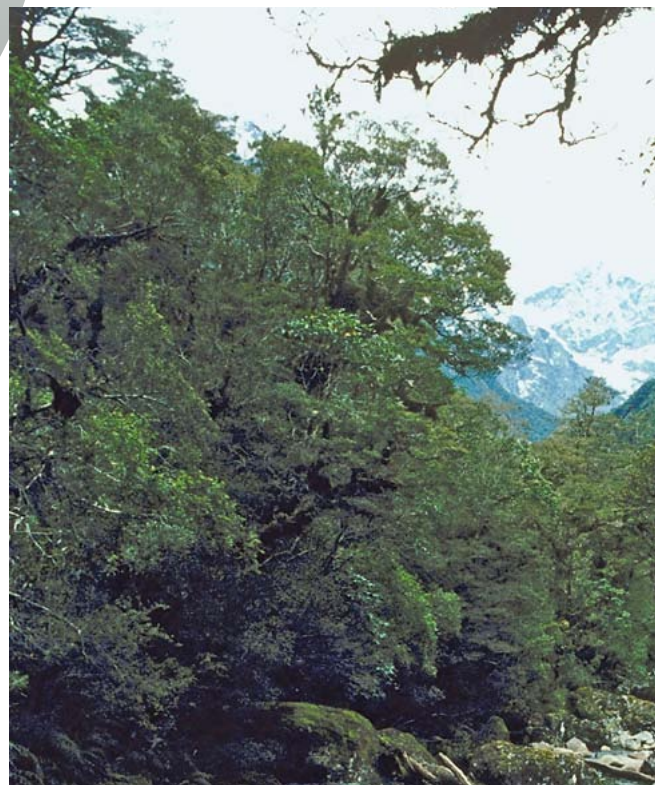
Dr Ian Horner from Plant and Food Research is initiating **field trials of phosphite** as a potential control tool for kauri dieback. Treatment with phosphite has been used to help control Phytophthora diseases in tree crops such as avocados and apples with great success, and in some native forests (for example, in Australia) and it has potential to control PTA. Last year he carried out trials with infected kauri seedlings in the glasshouse and was able to completely stop the disease in its tracks; all of the untreated trees were killed by the disease, but most of the phosphite-treated trees survived. Phosphite weakens the PTA and helps the tree to recognise PTA as an invader, so the kauri can raise its own defences to repel the attack. The next phase of the work is to test the effectiveness of phosphite for improving survival of kauri trees infected by PTA in the forest.

Ian Mitchell (Programme Relationship Manager) is working with him so that mana whenua are involved in the process of selecting sites. It will take a couple of years before enough data will be available to assess the treatment's effectiveness.

Tangata whenua consultation for potential phosphite field trials at Raetea (south of Kaitaia, Northland). L to R: Rongo Bentson, Te Runanga o Te Rarawa; Ian Horner, Plant and Food Research Ltd; John Beachman, Department of Conservation; Victor Holloway, Te Runanga o Ngati Kahu; Maria Heke, representing the hapu Kohatutaka, marae of Mangataipa and Mangamuka. Photo: Ian Mitchell, Kauri Dieback Programme Relationship Manager.

» **Planning & Intelligence – a recap** continued

Other work includes investigating kauri **genetics** to identify any possible natural resistance, **performance indicators and measures** for the programme continue to be implemented, work also continues on a comprehensive **Guide to Track Management** on land containing kauri aiming to preventing the introduction and spread of kauri dieback on public walking tracks and there is ongoing examination of farm stock as disease vectors.



Coming and Going

At this time we acknowledge our colleagues in both the Ministry of Agriculture and Forestry and the Department of Conservation – both of which are in various stages of restructuring. Both processes have already seen significant changes to personnel and roles and there's more to come. Kia kaha.

On the positive front – David Eyles joined the programme as Planning & Intelligence lead in December.

This follows a period when Fiona Bancroft was both programme manager and P&I lead. David has been with MAF since early 2008 and is in the Plant and Environment Response team managing responses to insect plant pest and plant disease incursions. This is the same team that dealt with the initial kauri dieback detection.

He lives with his family in Lower Hutt; his wife also works for MAF as a project coordinator and they have two kids, 7 and 14 years old. Before NZ they lived in Liverpool in the UK for 5 years, and before that born and bred in South Africa in the Cape Town area.

He's been involved in area-wide pest management programmes for 18 years in Europe, South Africa and now in New Zealand. In the UK he was involved with a company developing the sterile insect technique (SIT) for fruit fly in countries around the Mediterranean. He also worked with the yellow fever mosquito developing mass-rearing methods.

David's career began with integrated pest management for vegetables grown under cover, moving to integrated pest management research in the deciduous fruit industry, on topics including codling moth, mites and secondary pests. Moving to the pest management division of the Agricultural Research Council, he was involved with all aspects of the fruit fly SIT programme including all the field operations of host detections and insect monitoring systems. He also developed and managed a fruit fly rearing facility with 20 staff, producing 5 million sterile male flies a week for release by air.

He has travelled all over the world including Guatemala, the USA, UK, Spain, Portugal, Slovakia, Croatia, and a couple of visits to Australia. He is an active runner, loving the hills around Wellington and regularly runs to the Karori wind turbine on a Friday. He also loves quality beer, is a keen bird watcher and will read just about any non-fiction.

He says it's great to be on the team and is very pleased to be working with the depth of expertise and a relatively well funded programme. Main challenges seem to be, not only keeping the good work going between the multiple stakeholders, but an ongoing issue is having very few people who can focus full-time on the programme. Most importantly, the challenge is not forgetting the reason we are involved – that is trying to sort out the very real issue with the trees.

The story so far...

Our treasured taonga is under threat from kauri dieback disease. It has already killed thousands of kauri trees and will spread further unless all forest users take action.

New Zealanders see kauri as playing a huge part of who we are. Its status derives from its mythical origins and present day importance to our biodiversity, eco-tourism economics and our innate sense of what New Zealand is all about. Kauri contributes to our national identity, spiritual wellbeing, economic prosperity from tourism and our overall biodiversity and interconnected forest ecosystems.

Kauri dieback disease has emerged as a major threat, some would say the most catastrophic biosecurity threat of recent time.

Kauri dieback is a fungus-like disease specific to New Zealand kauri and can kill trees of all ages. Microscopic spores in the soil infect kauri roots and damage the tissues that carry nutrients within the tree. Infected trees show a range of symptoms including yellowing of foliage, loss of leaves, canopy thinning, dead branches and lesions that bleed resin at the base of the trunk. It is believed to have been introduced from overseas.

The disease produces both a soil-borne 'oospore' and water-borne 'zoospore' that can move on its own. Both spores can infect kauri roots.

Spores of kauri dieback were first discovered along with sick kauri on Great Barrier Island in the 1970's. Identification methods at the time led to these samples being misclassified. Kauri dieback was formally identified in April 2008 as *Phytophthora* taxon *Agathis* (or PTA).

Phytophthoras are commonly known as "water moulds" and comprise some of the most destructive plant diseases known to man. The Greek word literally means 'plant destroyer.'

Unfortunately these destructive Phytophthora diseases have been unwittingly introduced to many native forests throughout the world where they are not only killing millions of canopy trees but also whole ecosystems that rely on the trees.

Unfortunately kauri has joined this list and kauri dieback disease has killed trees in the Waitakere Ranges, on private land throughout the Auckland region, in the forest plantations of Omahuta, Glenbervie and Russell in Northland, Department of Conservation reserves at Okura, Albany, Pakiri, Great Barrier Island, Trounson Kauri Park and the Waipoua Forest in Northland, home of our most iconic kauri - Tane Mahuta.

There are pockets of health and resistance too, however.

At this stage, the disease has not been detected in many areas of Northland forest, the Hunua Ranges, Hauraki Gulf Islands (excluding Great Barrier) and bush in the Coromandel peninsula. It's imperative that we protect these unaffected areas.

Since 2009, MAF, the Department of Conservation, Auckland Council, Northland Regional Council, Waikato Regional Council and the Bay of Plenty Regional Council have joined forces to cover research into the detection and spread of kauri dieback, methods to control it and public awareness campaigns to help stop its spread.

The other programme partner is tāngata whenua. Since first learning of kauri dieback, tāngata whenua throughout the kauri catchment have been keen to be involved in an issue critical to the health and wellbeing of their taonga, the mighty kauri. One of the ways this has happened is through the establishment of a Tāngata Whenua Roopū (TWR) where interested marae, hapū, iwi and Māori-owned land blocks can nominate a representative to sit on the TWR. TWR provides advice from a tāngata whenua perspective into all aspects of the long-term management programme and nominates tāngata whenua representatives to all lead and workstream groups.

A surveillance programme is helping to assess and monitor locations of kauri dieback disease. Research

is underway to improve detection methods, increase our knowledge of how the disease spreads and develop effective control methods. Trials involving the use of phosphite to treat the disease have shown promising lab results and field tests have begun.

Work is also going into improving track construction, drainage and other man-made influences that will help reduce the spread of the disease.

There have also been trial closures of tracks in some parks, or re-routing tracks away from kauri.

The programme has focused on limiting the spread of the disease and protecting uninfected locations. Information is being shared with landowners, visitors, community groups, journalists, clubs and event managers to help build awareness, understanding and action around kauri dieback.

The key message being driven home is to stop the spread of the disease:

» Make sure shoes, tyres and equipment are cleaned to remove all visible soil and plant material – before AND after visiting kauri forest

» Stay on the track and off kauri roots

These messages have come from the understanding that spores of kauri dieback are found in the soil around affected kauri. Any movement of infected soil can spread the disease. Human activity involving soil movement (on footwear, machinery or equipment) is thought to be the greatest cause of spread.

We all can help - tourists, hunters, trappers, trampers, runners, bikers, walkers. We all need to make it happen, rather than hope 'someone else' will do it.

So, to spread the word rather than the disease, you can access more information at the programme's website – www.kauridieback.co.nz .

If you think your trees have symptoms of kauri dieback call **0800 NZ KAURI (69 52874).**

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

Contact nick.farland@maf.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!