

Kauri Dieback

YOUR QUESTIONS ANSWERED

September 2016



Q: “What causes kauri dieback?”

A: Kauri dieback is caused by a fungus-like pathogen called *Phytophthora agathidicida*, which was identified in 2008, and was formerly known as *Phytophthora taxon Agathis* (or PTA).

Q: “How does kauri dieback kill kauri?”

A: The microscopic *Phytophthora agathidicida* spores in the soil seek out and infect kauri roots, and then damage the tissues that carry nutrients within the tree. Infected trees will **eventually** show a range of symptoms, including yellowing foliage, leaf loss, dead branches, and often (but not always) lesions that bleed resin at the base of the trunk.

Q: “How is kauri dieback spread?”

A: Any movement of contaminated soil can spread the disease, regardless of whether that soil came from around kauri trees or not. Human activity is the leading cause of infected soil movement (on footwear and equipment). But the pathogen can also be moved by animals such as pigs, by water moving through the soil, and possibly by river and stream water.

Q: “Could there one day be a cure for kauri dieback?”

A: It is highly **unlikely** that a cure will be found. Phosphite is being researched as a means to slow the spread of the infection within individual kauri, but it does not cure the disease and has only a limited application - if any - in natural forest (trees have to be repeatedly injected with the chemical, at multiple sites on the trunk). The only way to save kauri is to clean gear before and after going near kauri, and to stay off kauri roots.

Q: “Where is it?”

A: Kauri dieback has been detected (through testing) in a number of places, **on public and private land**, throughout the upper North Island (which is where kauri naturally occur), including in the Waitakere Ranges, on private land throughout Auckland and Northland, in the forest plantations of Omahuta, Glenbervie and Russell in Northland, on public land at Okura, Albany and Pakiri, in the Trounson Kauri and the Waipoua Forest parks in Northland, and on Great Barrier Island. It’s also been detected on the Coromandel Peninsula, at Hukarahi and on private land near Whangapoua. **However you can’t ever assume an area is free of kauri dieback – see below.**

Q: “Does kauri dieback kill all kauri?”

A: It kills most - if not all - kauri that it infects (regardless of age). The delay between a tree becoming infected and that tree showing any signs of the infection varies enormously between trees – it is common to see a tree that has been killed by kauri dieback next to a tree that appears healthy.

Q: “Is it possible that some kauri are resistant to kauri dieback? Could some resistance develop?”

A: There is no evidence that any individual kauri are resistant to kauri dieback, although some kauri succumb much faster to kauri dieback than others.

Q: “Is the disease spread by wind?”

A: No, it is only spread by soil movement, carried mostly by people with contaminated soil on their footwear and equipment.

Q: “Can the disease be spread by water? Or by birds such as kiwi?”

A: The pathogen is spread through the soil by water. It is also possible that it is spread by streams and rivers, especially under flood conditions. It's theoretically possible that birds may spread the disease, but the greater the amount of soil moved, the greater the risk – which puts people - and the things they do - at the top of the list.

Q: “Will kauri survive kauri dieback?”

A: Yes, but only if everyone who goes near kauri cleans their gear before and after, and stays off kauri roots – by doing the right thing, people do have the ability to save kauri. And there are plenty of precedents for where the public have helped overcome biosecurity threats. E.g. many people thought it would be impossible to keep didymo out of the North Island's lakes and rivers, but so far it's been kept to the South Island for more than 10 years. And the fruit fly outbreak in Grey Lynn, Auckland in early 2015 was successfully controlled because people did not move fruit from that suburb.

The majority of kauri do not have the disease; for example it has not been detected in many areas of Northland forest, in the Hunua Ranges, or on the Hauraki Gulf Islands (excluding Great Barrier Island).

Q: “Does the pathogen kill other species?”

A: Field observations suggest it does not, but research is being carried out to explore this further.

Q: “How long has it been killing kauri?”

A: Evidence suggests the disease has been present in New Zealand since at least the early 1950s.

Q: “Where did the pathogen come from?”

A: This is subject to ongoing research, which so far suggests the pathogen came from overseas.

Q: “If the pathogen did come from overseas, how could it have been introduced?”

A: It could have arrived on anything that had as little as just a pinhead of contaminated soil on it; e.g. tramping gear, army surplus machinery used in the Pacific during the Second World War, or plant specimens ... it’s likely that we will never know for sure.

Q: “How many kauri has kauri dieback killed so far?”

A: Estimates vary; definitely hundreds, probably thousands. It is important to note however that all the evidence indicates that the majority of kauri are not infected by kauri dieback.

Q: “What should I do if cleaning my gear on site is not practical?”

A: Make sure your footwear and equipment is spotlessly clean before you arrive in the area, and that it has been disinfected with your own supply of Sterigene – if available. Before you leave an area with kauri, put your shoes (as well as dirty clothing and any other equipment that has come into contact with soil) in a plastic bag and take them home with you for cleaning and disinfecting with Sterigene (if available). If you have to go off-track, don’t go near kauri – a kauri’s roots can extend three times the distance from the trunk to the edge of the tree’s canopy; standing on these roots damages them and makes them vulnerable to infection.

Q: “I don’t need to clean my gear before or after visiting my local kauri because they are the only kauri I ever visit - and they don’t have the disease.”

A: You don’t know your local kauri are free of the disease. Kauri dieback can ‘hibernate’ in the ground for several years. And kauri can harbour the disease for a long time before they show any signs of infection. **Therefore you can never assume an area is free of kauri dieback.**

Q: “How can I protect kauri on my land?”

A: Ensure all visitors to your property (friends, family, contractors etc.) know to arrive with clean footwear, equipment and tyres (this will also reduce the chance of unwanted weeds being spread). If possible, avoid going within three times the distance between the trunk and the edge of a tree’s canopy. Keep dogs and animals away from kauri - fence off kauri from stock. Go to www.kauridieback.co.nz to download a warning sign alerting visitors to the risk of spreading the disease. For a more permanent sign call the Kauri Dieback Hotline on 0800 NZ KAURI (69 52874), or email kauridieback@mpi.govt.nz.

Q: “Will composting kill the spores of kauri dieback? What should I do with weeds removed from around my kauri?”

A: Any weeds removed from areas of kauri should be left on site – not placed in community weed bins or green waste for composting. Kauri foliage should be left on site also – it could be harbouring the pathogen that causes kauri dieback.

Q: “Can I use the timber from dead kauri in any way?”

A: No. All timber from trees affected by kauri dieback is considered a biohazard and must remain in the vicinity of the tree, or be taken to an approved landfill for deep burial (see www.kauridieback.co.nz for details). It cannot go into greenwaste bins, or be chipped. The branches, foliage, seeds etc. of the tree could be harbouring the pathogen.

Q: “I’m a hunter. I have to go off track, and cleaning my gear when I’m pursuing an animal is not practical.”

A: Please only hunt in areas where the disease has not been detected, and clean and disinfect (if Sterigene is available) your gear between forests/catchments. Ensure you arrive at the forest with clean and disinfected footwear and gear. Use tracks as much as possible, and try to avoid going within three times the distance between a kauri’s trunk and the edge of its canopy. When leaving a forest, clean all visible traces of soil from your footwear and gear and disinfect, or (plastic) bag it for thorough cleaning and disinfecting at home. To avoid spreading contaminated soil inside your vehicle, keep clean ‘new’ footwear for the drive home.

Q: “Who makes up the Kauri Dieback Programme?”

A: The Programme is managed and run by staff and representatives from tangata whenua, the Ministry for Primary Industries, the Department of Conservation, Auckland Council, and the Northland, Waikato and the Bay of Plenty Regional Councils – but it’s up to the whole community to stop kauri dieback.

Q: “How effective is Sterigene (formerly known as Trigene) at killing the pathogen that causes kauri dieback?”

A: Sterigene is highly effective at killing the pathogen that causes kauri dieback in three of its four life stages, although it is not entirely effective at killing the spores in the fourth ‘hibernation’ stage. However in terms of its overall effectiveness, biodegradability and non-toxicity, Sterigene is considered the best product available.

Q: “Will controlling kauri dieback necessitate increased levels of animal control?”

A: The research into the role animals have in spreading kauri dieback is continuing, but it is considered highly likely that pigs in particular do spread kauri dieback. Therefore pig culls have taken place in kauri forests where the disease is widespread. However blanket culls are not being considered at this time.

Q: “Why are tracks sometimes closed because of kauri dieback?”

A: The muddier a track is, the higher the risk that kauri dieback will be introduced to or spread from a particular area. On popular tracks, it’s a good use of public money to build boardwalks, or to re-route tracks. However sometimes less popular tracks are closed because the cost of the improvements needed to reduce the chances of kauri dieback being spread cannot be justified by the number of users. Tracks are also regularly closed for upgrades aimed at reducing the chances of visitors spreading kauri dieback.

Any more questions? Go to www.kauridieback.co.nz or email kauridieback@mpi.govt.nz.