



Kauri Ora: Landfill and contaminated material disposal

Best practice guide for the
disposal of PA pathogen
contaminated soil and
vegetative material



KA RAUHĪ TE TUPU O TE KAURI
—
GIVE KAURI SPACE TO GROW



Tiakina Kauri is an agency based within Biosecurity New Zealand that provides national direction for the achievement of the objectives of the National Plan for Kauri, through active partnership with mana whenua and collaboration with regional councils and the Department of Conservation.

For more information about protecting Kauri, visit www.kauriprotection.co.nz

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About this guide

This guide provides best practice guidance on the safe disposal of contaminated or suspected contaminated material when working around Kauri and Kauri Hygiene Zones, including when selecting a suitable disposal area for potentially contaminated material. PA spreads primarily through the movement of contaminated soil. Activities which involve soil and earth moving in high volumes poses a significant risk of spreading PA if not mitigated and disposed of appropriately.

Risk management principles are used to determine the likelihood of PA spread for an activity or operation. This is crucial in containing the spread of PA pathogen, which causes disease and kills Kauri.

Disposal is defined as "moved off-site to an approved facility". In situ is defined as 'disposed of in the original work site'. This may include the immediate surrounds of the work site. If material cannot be left in situ, then safe disposal of material off-site to a suitable landfill or other acceptable location is recommended.

The guidelines are not policy, but should be considered by planners, land managers and contractors when planning any operations. Please contact your local council or land management agency if there are local policy or regulatory constraints.

For more information about protecting Kauri and the PA pathogen, visit www.kauriprotection.co.nz

About the PA pathogen

Kauri are threatened by a soil-borne pathogen called *Phytophthora agathidicida* (PA). PA infects Kauri through their roots and restricts the trees' ability to transport water and nutrients between the roots and the leaves. This causes the fatal disease in Kauri formerly known as kauri dieback, which eventually starves the Kauri.

There is no proven way to cure an infected Kauri, and there are limited treatment options.

PA can remain viable and infectious in soil and water for unknown periods of time. Spores can survive and remain viable in the soil, long after a tree dies. PA has the capacity to survive in water, however, spread from open water sources has yet to be proven. Spread via waterways during flooding and spread via wastewater run-off is also possible.

To stop the PA pathogen from spreading, we must follow correct hygiene protocols when moving and working around Kauri.

The PA pathogen can be spread by anything that moves contaminated soil, including:

- vehicles and machinery;
- footwear, clothing or equipment that touches the soil;
- animals, including wild pigs and stock, that have walked through infected areas.



PA pathogen infection can cause bleeding gum



View of Kauri canopy with dead branches

Unwanted organism

Material from sites with known PA positive must be handled in accordance with section 52 of the Biosecurity Act. The act states:

PA is an unwanted organism in New Zealand. This means that knowingly moving, transmitting, releasing or spreading PA is an offence under the Biosecurity Act 1993, unless permission has been granted by a chief technical officer. If your operation is known to be, or likely to be, contaminated with PA, contact Tiakina Kauri or your Regional Council to seek advice. Information on handling unwanted organisms can be found here: www.mpi.govt.nz/biosecurity/how-to-find-report-and-prevent-pests-and-diseases/handling-unwanted-organisms/

The National Pest Management Plan for Kauri

In August 2022, a National Plan was launched to help protect Kauri from the PA pathogen. The National Plan includes 10 rules that apply to anyone who grows Kauri, goes into Kauri forests, or lives or works around Kauri.

By following this guide and the rules of the National Plan, we can all help protect Kauri for generations to come.

For more information about the National Plan, visit www.kauriprotection.co.nz/national-plan

Rules that apply to landfill and contaminated material disposal

Earthworks Risk Management Plan (ERMP)

If you want to undertake any earthworks within a Kauri Hygiene Zone, you must have an approved Earthworks Risk Management Plan in place prior to commencing work (**Rule 5**).

A "how to" guide and a template for creating this plan are available at www.kauriprotection.co.nz/resources/best-practice-guides/earthworks-risk-management-plan

PA Risk Management Plans (PRMP)

If there are Kauri nearby, there is a risk of spreading PA which needs to be managed. For works outside of a Kauri Hygiene Zone but within a Kauri forest or near Kauri, you should develop and follow a PRMP for vehicle and machinery use or activities. This is a best practice recommendation.

Additionally, if your property is already infected with PA or has a high risk of being infected, Tiakina Kauri may ask you to develop a PA Risk Management Plan to help reduce the risk of the PA pathogen spreading on your property. (**Rule 4**).

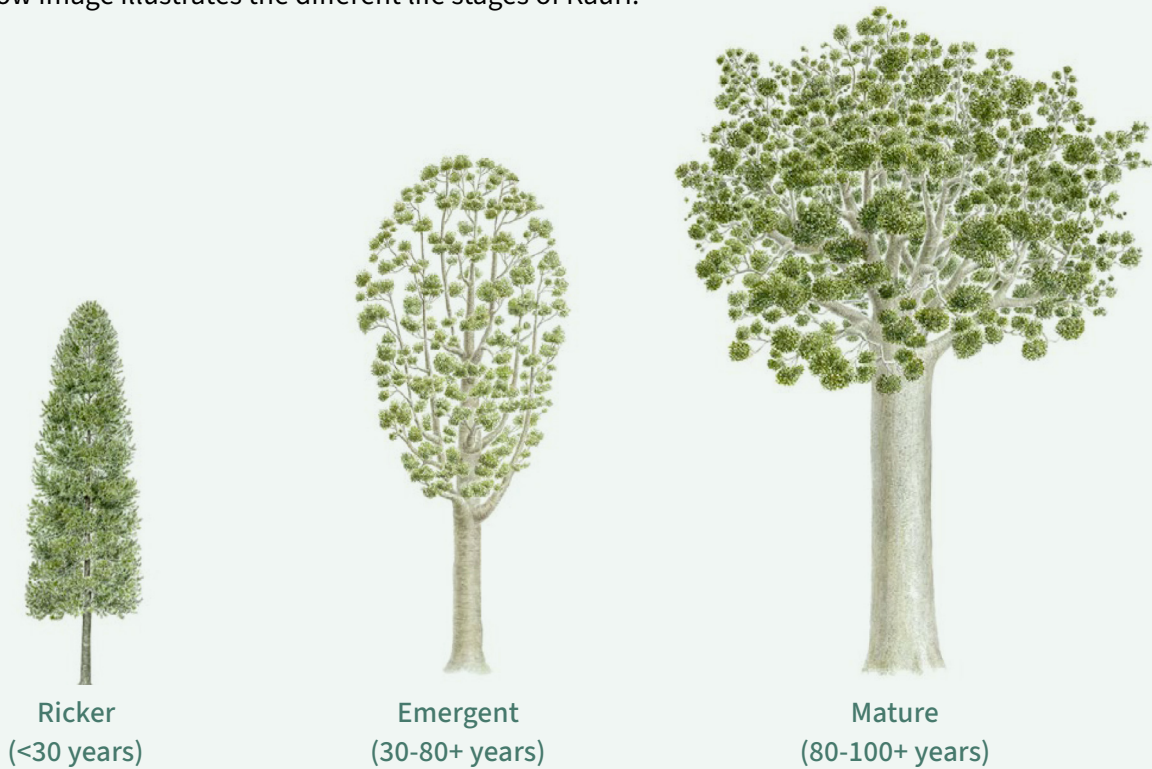
A "how to" guide and a template for creating this plan are available at:

www.kauriprotection.co.nz/resources/best-practice-guides/pa-risk-management-plan



Recognising Kauri

The below image illustrates the different life stages of Kauri.



Kauri Hygiene Zone

The best way to protect Kauri and avoid introducing or spreading the PA pathogen through the movement of soil or dirt, is to avoid operations around Kauri and Kauri forests whenever possible.

To protect Kauri, it is important not to damage or disturb their roots. Kauri roots are shallow and fragile and extend outwards about 3x the radius of the canopy of the tree; this area is called the Kauri Hygiene Zone.

Figure 1: The Kauri Hygiene Zone for a single Kauri

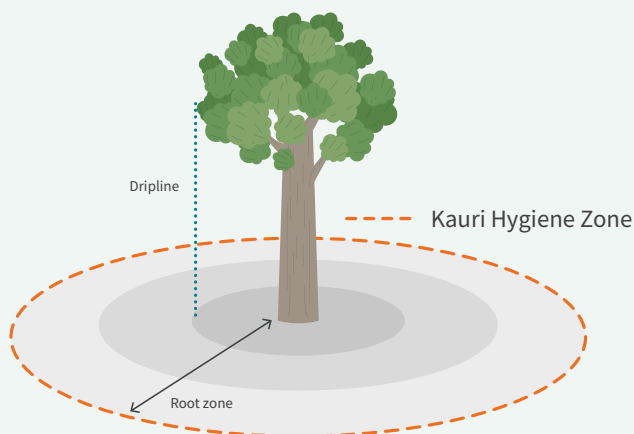
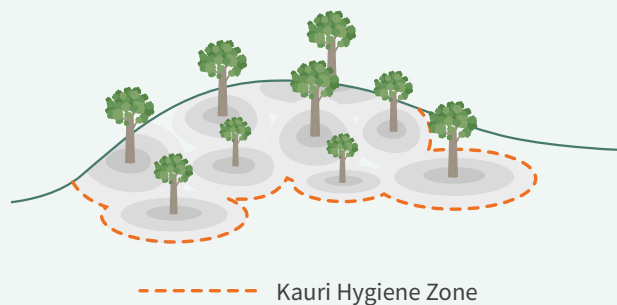


Figure 2: The Kauri Hygiene Zone for multiple Kauri



Planning considerations

Understanding how to manage excess soil and vegetative matter as a by-product of an operation prior to undertaking earthworks or soil disturbance activities around Kauri is critical. Depending on the operation, it might not be suitable to leave in situ, even though this is the preferred option.

Another example of contaminated material disposal is removing runoff or waste from a Kauri hygiene station, despite whether it is a permanent or temporary station. An operator needs to identify how excess material will be removed or how hygiene stations will be cleaned out and where that material will go.

- The detail on how material will be disposed of must be identified in either a PA or Earthworks Risk Management Plan if these are being written for the operation.
- Identify suitable landfills or locations for disposing material and describe how it will be disposed of and ensure any risk of PA spread is mitigated.
- Carry out a landfill assessment to determine suitability using the table below. If the landfill meets all or most of the above criteria, then the likelihood of PA spreading to other areas decreases.
- Carry out a risk assessment on the material. Higher volumes of soil, hygiene station runoff and waste, and sites with unwell Kauri without a PA positive carry a higher risk of spreading PA.
- Spread through accidental spillage during transportation, groundwater contamination or spread via contaminated vehicles must also be considered.

Approved landfills

The preferred method for any operation around Kauri is the disposal of material at an approved landfill. However, there are alternatives to approved landfills which can be considered in relation to volume and risk of material and may depend on site and process. Consult with your local regional authority (council or Department of Conservation) to find out more.

A number of landfills were assessed using the criteria in Table 1. Operational information for these landfills is outlined in Table 2.

The list is not meant to be an official approval list of landfills, but act as a quick reference guide to assist planners, land managers and contractors when planning any operations. Final decision on the landfill selection should be made by the land authority agency in conjunction with the management agency or an authorised person.

It is also important to note that circumstances at a suitable landfill may change over time hence a landfill reassessment against the criteria is advised.

Table 1. Criteria for landfills

Criteria	
1	Facility has the ability to deep bury the material at least two metres deep upon arrival or as soon as practical and;
2	Facility has a wheel wash and wash-down facilities to remove soil and material contamination from the transport vehicle prior to exiting the landfill and/or;
3	If washing facilities are not available, then a suitable sealed truck bin liner that is robust enough to contain the material during loading and transportation of material to the landfill is installed and;
4	The landfill is lined with a non-permeable layer that prevents leachate groundwater containments from entering the environment and;
5	Any wastewater is suitably contained and;
6	The location of the landfill perimeter is located at least 20 metres from Kauri and waterways and;
7	The landfill is secure and has a security fence around the entire site.

Loading and transport

- Reduce the risk during transit by using trailers with sealed sides (or liners installed) to ensure all loads being transported are appropriately contained and leakage from soil or debris is reduced during transit. There may be situations where this is not practical, however, every care should be taken to reduce the risk of soil or debris from falling off the transport vehicle.
- Liners should be of suitable thickness and durability to prevent rupture during transport and contain the material sufficiently to prevent any leakage. The liners can be folded over to encompass the entire load and then appropriately secured. If liners can be reused then they must also be cleaned, dirt free and disinfected.
- Soil for disposal should be dampened with water prior to transportation and covered at all times during transportation.
- Trailers should be tip trailers.
- Contractors may be required to have a permit to dispose of material at the landfill.
- Contacting landfill management to access the site is advised as public may not be permitted entry.
- After unloading, the vehicle (including trailer) should be cleaned using the wash-down facilities at the landfill (if available) and the liners subsequently disposed of. The trailer unit should be sprayed with 2% Sterigene solution either at the landfill or back at the depot after use. It is expected the contractor will carry out wash down of the trailer unit.

Relevant Best Practice Guidelines should be followed prior to transportation (see below). Refer to specific operational information for landfills listed in Table 2.

Table 2. Landfill operational information

Region and operator	Landfill	Operational information
Northland Northland Waste	Puwera	Permit enquiries to Nate Holland-Kearins natehkearins@northlandwaste.co.nz 0273632265
	Northland Regional Landfill South of Whangarei	Contractors will help in washing down the truck/trailer using the portable wash down facility at the tip face. Upon exiting the site, the contractor will drive the truck/trailer unit through the wheel wash prior to leaving the premise. Website: https://northlandwaste.co.nz/business/landfill-services
Auckland Waste Management	Redvale Dairy Flat	Permit enquiries to Sales Team Jenny 021 383 061 or Fei 027 404 7430 Sales team will advise what is permitted and other requirements. Wheel wash/truck wash is covered in the site induction for new drivers. Website: https://www.wm.nz/
	Whitfords Whitford Maraetai Rd	Permit enquires to the weighbridge on 09 530 8774 or admin All drivers to be inducted and set up in system Pre acceptance criteria for deep burial required. There are volume limitations. No hazardous waste. Website: https://www.wm.nz/
Waikato Ridge Road Quarry	Ridge Road Quarry (RRQ) Managed Fill Pokeno	Permit enquires to Paul Livesey 021 767 950 or weighbridge 021 434 736. No wood, branches, leaves or other organic material is allowed at the landfill. Soil is allowed. Contractors will help with washing down the truck/trailer after disposal and before exiting the site. Upon exiting the site, the contractor will drive the truck/trailer unit through the wheel wash prior to leaving the premise. Website: http://rrq.co.nz/
Waikato Envirowaste Services	North Waikato Regional Landfill Hampton Downs Road	Permit enquiries to disposals@envirowaste.co.nz All contractors need to give 24-hour notice upon arrival at the site. Please contact Weighbridge on 07 8260070 As per driver induction or weighbridge instruction. Upon exiting the site, the contractor will drive the truck/trailer unit through the wheel wash prior to leaving the premise. Ask for acceptance criteria for what is permitted or not. Webpage: https://barkley.hosts.net.nz/~esladmin/uploads/pdfs/north-waikato-regional-landfill-info-sheet.pdf
Coromandel Waste Management	Tirohia Landfill	All enquiries to Kerry Bain 021 599 229 Kbain@wm.nz All new contractors will require an account to be set-up and undergo a Health & Safety Induction. Contractors will give at least five working days' notice before arriving at the site. Upon exiting the site, the contractor will drive the truck/trailer unit through the wheel wash prior to leaving the premise. Website: http://www.wm.nz/



This guide was updated in 2025 by Tiakina Kauri with the help and advice of:

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- Bay of Plenty Regional Council
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For more information about protecting Kauri, visit www.kauriprotection.co.nz