

# Bio-Diversity and Pest Management Plan for

## Nga Uri o Hau Plant Nursery

Main threats include:

### Myrtle Rust



### Kauri Dieback



### Plague or Rainbow Skinks (*Lampropholis delicata*)



### Argentine Ants (*Linepithema humile*)



## Myrtle Rust Nursery Management Protocol

This protocol has used information sourced from the nzppi website. Follow this link <https://www.nzppi.co.nz/advocacy/107-699/plant-production-biosecurity-scheme-background-information>

Nga Uri O Hau Native Nursery currently grows several plant species from the Myrtle family, including *Leptospermum scoparium*, Manuka, *Kunzea ericoides*, Kanuka and *Metrosideros excelsa*, Pohutukawa

Other plants in the *Myrtaceae* family include *Lophomyrtus bullata* (Ramarama), *Lophomyrtus obcordata* (Rohutu or NZ Myrtle), *Metrosideros excelsa* (Pohutukawa), *Metrosideros perforata* (Akatea or White Rata) and *Syzygium maire* (Maire tawake or Swamp Maire)

1. **Staff awareness** – each staff member needs to be given a copy of this policy as well as pictures of Myrtle Rust affecting plants. Regular staff meetings must include an opportunity to discuss any sightings or concerns and talk about what to look for and what to do if they see anything suspicious.
2. **Ensure all staff follow the recommended nursery hygiene practices**
3. **Crop aggregation** – consolidate all stock of plants from the *Myrtaceae* family within a defined area onsite and away from native or landscape planted Myrtle plant species. Select the area to avoid direct exposure to the prevailing winds of the season
4. **Quarantine incoming plant stock** – Maintain a quarantine area for imported plant stock with a suitable buffer zone. Inspect stock upon arrival. A. If you find anything suspicious, call MPI 0800 80 99 66. If possible, isolate the plants with an igloo-hoop-like plastic cover. B. If you did not find anything suspicious, spray with one of the recommended fungicides
5. **Crop inspection schedule** – weekly survey of Myrtle species onsite and along the boundaries. Pay attention to plants located upwind based on the most prevailing wind direction of the season ( Easterly at Te Arai)
6. **Preventative fungicide programme** – Implement a regular fungicide treatment programme across all Myrtle species. A. Fortnightly from spring to late autumn (October – May) B. Monthly in winter ( June – September). If using fungicides on a regular basis, ensure a suitable fungicide rotation system is in place to prevent resistance development to a particular group of fungicides.
7. **Treat growing areas between crops** – Treat the growing area with a disinfectant i.e. Copper upon the completion of the crop growing cycle before placing a new crop down on the production bed or bench.

8. **Nursery dispatch inspections** – Inspect and treat with fungicide all Myrtle species plants prior to dispatch
9. **Sterilise the van with Virkon S prior to dispatch if we are delivering**
10. **Recommend and encourage any other carriers to sterilise their transport prior to loading up plants**
11. **Restrict access** – Allow access to the production areas only to vehicles and people essential to the nursery operations. Put up Staff Only Area signs
12. **Remove waste material** – Dispose of all plant material i.e. cut back clippings, into the compost bin. Do not leave any plant material lying around the nursery
13. **Personal hygiene** – Wash hands before work with disinfectant and again after each break
14. **Disinfect nursery bagging areas** – When bagging Myrtle species plants disinfect the bench at the start and end of each day.
15. **Disinfect all tools before and after use** on Myrtle species plants i.e. clippers and secateurs'

#### **If you find anything suspicious**

1. Do not move the plants from the site or your vehicle
2. Take photos of the suspected myrtle rust and the whole plant
3. Do not attempt to touch or collect samples as this may increase the spread of the disease
4. If possible isolate the plants with an igloo-hoop-like plastic container
5. Call MPI's exotic pests and diseases hotline on 0800 80 99 66

#### **Some pictures of Myrtle Rust:**





On Ramarama (*Lophomyrtus*)



On Pohutukawa (*Metrosideros*)

## Kauri Dieback Management Policy

### Preventing Kauri Dieback Entering Our Nursery

Kauri dieback is killing the kauri forests of New Zealand. We have a responsibility to ensure the disease does not come into the nursery so that we do not spread the disease with plants leaving our nursery.

To ensure our nursery remains clear of the disease, the following practices must be followed at all times. Even one slip up can be enough to introduce it to our nursery.

Kauri dieback is spread through soil and the most likely ways this can happen are from soil on your shoes, vehicles, and animal paws. It can also be brought in from dirty containers, soil from the bush and bringing in kauri trees from other sites.

Please read the information provided thoroughly and come and let Missy know if you are unsure about any aspect of the policy. Each staff member is responsible for ensuring the policy is carried out, both in regards to their own actions and ensuring anyone who isn't a staff member is informed about our policies and follows them.

- All footwear must clean and free of dirt when entering the nursery. Scrub them BEFORE you come to work and disinfect them on arrival. Disinfectant is kept in the tractor shed.
- Footwear must be cleaned every time you come back onsite if you have been through ANY soil at all
- To disinfect your footwear brush off soil into the bin provided and spray well with Sterigene. Make sure you follow the proper process for applying this chemical:

*Keep out of the reach of children.*

*Avoid contact with skin and eyes.*

*In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.*

*Wear suitable gloves and eye/face protection.*

*Do not mix with other chemicals. If you empty the spray bottle refill it immediately for the next person*

- Consider leaving your work boots or gumboots at work at the end of each day to reduce the chance of bringing soil onsite

- Visitors to the nursery, either friends or customers, must clean and disinfect their footwear before entering the nursery. It is staff's responsibility to inform visitors of the need to do this prior to entering the nursery. {Signage at nursery entrances recommended}
- Do not take nursery tractors or other machinery outside the nursery areas. Doing so may result in infected soil from the tyres being dropped in the nursery
- Check with management before taking your vehicle into the nursery. Areas where kauri are growing will be out of bounds for all but the nursery tractor
- Check with management before allowing any visitors access to the nursery with their vehicles
- No dogs are allowed in the nursery at any time. Advise visitors with dogs that they MUST be kept in the vehicle as animals have the potential to spread infected soil from their paws
- Our policy is to not take any used plant pots or containers at all. Any trays that leave the nursery cannot be returned due to the risk of disease.
- Before bringing in any equipment to work, ensure it is clean and free of dirt
- No kauri trees are to be brought onto the nursery grounds
- No plants dug out of the ground are to be brought into the nursery.
- Batches of kauri seed must be tested for kauri dieback disease. Auckland Council biosecurity team will do this for free 09 3010101
- Do not accept any plants from off site that you may be offered by customers
- Kauri seed can only be brought into the nursery from areas guaranteed free of kauri dieback disease

Kauri dieback affected tree:



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### Plague or Rainbow Skinks (*Lampropholis delicata*)



#### **Field identification**

Plague **skinks** are brown or grey-brown, and have a dark brown stripe along each side of their bodies and an iridescent **rainbow**- like or metallic sheen in bright light. They are also known as **rainbow skinks**. Although smaller than native **skinks** (3–4 cm from nose to hind legs), they do look very similar.

## **Argentine Ants (*Linepithema humile*)**



### **Field identification**

There is no absolute feature that can solely identify Argentine ants in the field. The below features are helpful, but some other ant species also possess these.

- Workers are about 2–3 mm long and a uniform light-brown colour (compared with the common black species found foraging in urban areas in New Zealand).
- The ants move quite fast (not ponderous).
- They walk in defined continuous trails (not erratic ‘crazy’ behaviour of running about in circles)
- They have only a slight greasy odour when crushed, as opposed to the strong formic acid smell of some ant species.

From a 2015 assessment of risk pathways for the spread of Argentine Ants (*Linepithema humile*) and Rainbow Skinks (*Lampropholis delicata*) by commercial businesses in the eastern Rodney District to the Islands of the Hauraki Gulf - a report for Auckland Council Biosecurity-Environmental Sciences Division undertaken by Hannah Dabb, Rachel Gibbons and Diane Fraser from the Department of Natural Sciences at Unitec in Auckland

### **Conclusion**

Argentine ants and rainbow skinks are probably being transported to the Hauraki Gulf Islands, particularly by “high risk” businesses or customers of these businesses in the Eastern Rodney district. Results from the survey showed that rainbow skinks are more widespread than Argentine ants but both species are likely to be transported by commercial businesses to the Hauraki Gulf islands. The survey allowed for businesses in different risk categories (low, moderate and high) to be included in this study. There was a recurring trend that many of the businesses surveyed showed no knowledge or a lack of concern of these two species and the impacts on our native species and ecosystems. It is important that future management of these species is taken seriously as there is opportunity to keep both of the species from reaching the Hauraki Gulf islands. Education of the public and businesses is required in order to achieve this goal.

The full report is available here

<https://pdfs.semanticscholar.org/7eeb/6a7d828e91a23e673da850f5b2b0389ddf1c.pdf>