

National Myrtle Rust Workshop
Implications for *ex situ* collections

10 March 2011



**Common protocols: reportage, hygiene,
contingency plans**

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Pre-arrival plans

There were pre-arrival contingency plans for Eucalypt/Guava Rust :

- **National Plantation Timber Industry Biosecurity Plan (2007)**
www.planthealthaustralia.com.au/go/phau/biosecurity/plantation-timber
- **Industry Biosecurity Plan for the Nursery & Garden Industry - Threat Specific Contingency Plan -Guava (eucalyptus) rust *Puccinia psidii* (March 2009)** www.planthealthaustralia.com.au/go/biosecurity
- **Forestry, Rural and Urban Biosecurity Plan - Pest Specific Contingency Plan (Eucalyptus Rust) (2009-10)**

These contain much information and guidance which is still valid. They all need to be read in light of the **Australian Emergency Plant Pest Response Plan - Emergency preparedness and response guidelines** (v1, May 2010). (www.planthealthaustralia.com.au, select 'pp' quicklink).

These plans have been superseded for some *operational* purposes.



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Did the contingency plans work? Yes and No

- **Prevention of arrival:** NO (mode of arrival still unknown)
- **Early detection:** NO (Myrtle Rust probably here 1-2 years before first report; first report site was *not* arrival site)
- **Rapid response on first report:** YES (identification immediate; national response team convened)
- **Decision pathway (to eradicate or not):** UNCLEAR (seems not to have worked smoothly initially)
- **Immediate eradication efforts:** YES after some delays
- **Inspection of production properties and tracing of plant movements:** YES: intensive effort by NSW I&I staff
- **Inspection of bushland areas:** NO (-ish): intensive efforts by local DECCW staff but resource-limited; full 100km radius search proposal not put into effect; a wild epicentre not located for 5 months).



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CURRENT PLANS & OPERATIONAL PROTOCOLS

Plans

- **Australian Nursery Industry Myrtle Rust Management Plan 2011 (Nursery and Garden Industry Australia) – www.ngia.com.au**
- **DECCW Interim Management Plan for Myrtle Rust in Bushland (Dept of Environment Climate Change & Water, NSW) – UNDER DEVELOPMENT**

Protocols

- **Procedure - Personal decontamination kit & use for property visits (Industry & Investment NSW – checklist, best access by google of title)**
- **Personal decontamination for property visits (Industry & Investment NSW – Powerpoint as PDF, best access by google of title)**



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NURSERY INDUSTRY MYRTLE RUST MANAGEMENT PLAN 2011 (www.ngia.com.au)

- Developed for use by production nurseries and retailers of greenlife including garden centres, greenlife markets (wholesalers), big box hardware, supermarkets, chain stores, etc. – **not** just NGIA members
- Includes detailed protocols.
- Apply this plan to **all** plants from the Myrtaceae family, not only those that have been currently identified as hosts.
- “The nursery industry must consider all myrtaceous species [native and exotic] as potential hosts of Myrtle rust.”



Nursery & Garden Industry

**Australian
Nursery Industry
Myrtle Rust
(*Myrtle rust*)
Management Plan
2011**

Developed for the
Australian Nursery Industry

Published
October
2011



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NURSERY INDUSTRY MYRTLE RUST MANAGEMENT PLAN 2011

Contents (highlighted items contain detailed protocols):

[1 – 4: Intro material, genera of Myrtaceae, Myrtle Rust background, known hosts]

5. Fungicide Treatment

5.2 Myrtle Rust Fungicide Treatment Rotation Program

5.3 Fungicide Application

6. On-site Biosecurity Actions

6.1 Production Nursery

6.2 Propagation (specifics)

6.3 Greenlife Markets/Retailers

7. Monitoring and Inspection Sampling Protocol

7.1 Monitoring Process

7.2 Sampling Process

8. Interstate Movement Controls

9. Myrtle Rust Management Plan Declaration

10. Myrtle Rust Identification Photographs



Nursery & Garden Industry

**Australian
Nursery Industry
Myrtle Rust
(Biosecurity)
Management Plan
2011**

Developed for the
Australian Nursery Industry

Australian
Nursery
Industry

Periodic updates of this Plan are likely – monitor www.ngia.com.au.

For further information on whole-of-property biosecurity in the nursery industry, including on-farm programs (e.g. BioSecure HACCP and the industry Biosecurity Manual), go to www.ngia.com.au and follow the links.



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NURSERY INDUSTRY MYRTLE RUST MANAGEMENT PLAN 2011

Fungicidal treatments (plant production/ distribution sites):

- For the treatment of plants (Myrtaceae family) the industry has access to an Emergency Permit (PER12156) that allows a range of fungicides to be applied for the management of Myrtle Rust. If you intend to treat plants with a fungicide you must have a copy of this permit on-site and you must use the application rates as outlined in the permit. Permit is downloadable from APVMA website (www.apvma.gov.au) - click on 'Permits' and follow prompts.
- "The industry" for this purpose does include community-level nurseries (e.g. Landcare and Bush Regen nurseries) and individual growers.
- The Nursery Industry Plan (2011) provides guidance on action mode of these fungicides and timing/rotation for Myrtle Rust control.



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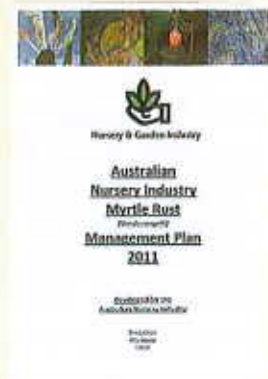
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NURSERY INDUSTRY MYRTLE RUST MANAGEMENT PLAN 2011

The Nursery Industry Plan (2011) also provides fairly detailed protocols for:

- Production nurseries (including propagation)
- Propagation areas (specifics)
- Greenlife marketers/retailers
- Monitoring and sampling



... and a compliance template form for sign-off by your business's suppliers.

These protocols are to be preferred to the less comprehensive versions in various brochures and on other websites etc.



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NURSERY INDUSTRY MYRTLE RUST MANAGEMENT PLAN 2011

- Details of nursery and silvicultural protocols may require liaison with NGIA and local DPI branches.
- State/Territory laws and requirements (including interstate movement protocols) may override the Nursery Industry Myrtle Rust Management Plan.

Nursery industry (NGIA) contacts:

- Anthony Kachenko
Phone: +61 2 9876 5200
E-mail: anthony.kachenko@ngia.com.au
Web page: www.ngia.com.au
- Michael Danelon
Phone: +61 2 9679 1472
E-mail: michael@ngina.com.au
Web page: www.ngina.com.au



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Nursery vs Bushland/Parkland: the risk factors differ, so must the protocols

The risk-factors and work situations in production nurseries and retail outlets are relatively standardised – hence the NGIA protocols above will cover most situations. Beyond the protocols themselves, the key factors, are motivation and consistency of enforcement.

Bushland, parkland and backyard-domestic situations are far more variable, and protocols must be tailored to suit particular physical, biological and industrial situations (without losing rigour).

This is hampered so far by the lack of:

- a comprehensive ‘master’ protocol for non-production situations,
- clear messages about what we hope to achieve.



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In the wild – what are our objectives?

- **Slow the establishment** of Myrtle Rust
 - particularly in new areas, non-infected vulnerable areas,
 - national parks and nature reserves,
 - threatened species/community sites
- **Minimise the impact** of Myrtle Rust:
 - particularly on threatened or near-threatened species and communities
 - over time also on species/communities not hitherto threatened.

[These adapted from draft 'DECCW Interim Management Plan for Myrtle Rust in Bushland' – under development]

In the process we must: **Monitor the behaviour of the disease and the susceptibility and response of plant species.**



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Slow the establishment, Minimise the impact

Actions in pursuit of these goals will include:

- Identify high value assets at risk (all scales)
- Limit the spread of Myrtle Rust to new regions, sites, species
- Monitor (spread, host range, host species/individual susceptibility and resistance, disease behaviour)
- Manage infections (mainly high priority 'spot-fire' sites, and very high value 'assets')
- Research, data management, governance
- Training, extension and external communication
- **Winning the psychological battle ("why bother?")**

Sanitation procedures and protocols to both meet and enable these Actions need to be **practical, affordable, and effective** (all relatively speaking!)



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For bushland situations, effective sanitation (aka hygiene, decontamination) depends on ...

- Identification of risk factors
- Procedures to minimise risk
- Procedures to decontaminate
- Consistent application of procedures
- Control of wild-card factors (incl. general public)

All precautionary and hygiene measures have some impact on:

- productivity and costs
- work practices
- staff comfort and morale.

Critical factors include: maintaining motivation; leadership; enforcement of standards; sense of being part of a common effort.



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Current best operational protocols (published)

No comprehensive 'master protocol' for bushland work exists as yet.
Two comprehensive generic protocols should be used for the time being
(neither is Myrtle-Rust specific):

- **Procedure - Personal decontamination kit & use for property visits** (Industry & Investment NSW – checklist, best access by google of title)
- **Personal decontamination for property visits** (Industry & Investment NSW – Powerpoint as PDF, visually demonstrates the previous; best access is by google of title)

Use these in tandem with the Myrtle Rust-specific leaflet:

- **Preventing spread of Myrtle Rust in bushland** (Industry & Investment NSW – at www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/362096/preventing-spread-Myrtle-Rust-bushland.pdf)

The DECCW Interim Management Plan (in prep.) will have a bushland protocol.



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General pre-trip risk analysis

Identify risk pathways in work to be performed. For example, are you:

- **Travelling in-vehicle through a known- or potentially affected region or site** (no exit from vehicle, windows closed) – only external vehicle washdown needed on leaving site/region.
- **Travelling in-vehicle and on foot in known- or potentially affected region or site** – total vehicle (incl. internal), gear, and personnel decontamination needed.
- **Visiting multiple sites, some known/potentially infected, some not** (as previous, plus between-site decontamination)

Decontamination on return to base or home is NOT an option – must be done in field regardless of conditions.

Carry appropriate gear: spare clothes, supplies of Farm-cleanse, metho and water, plus sprayers; paper or plasticised suits.

Work out site entry- and exit protocols beforehand, and stick to them.



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Nutshell version: Gear needed (single vehicle)



- 3-4 ltrs methylated spirits in water (70:30%), in sprayer (for vehicle interior, small gear, clothes, personal items incl. hats, glasses, wallets, cameras, notebooks)
- 3-4 ltrs 10% Farmcleanse in water, in sprayer (vehicle exterior and large gear)
- Storage tubs, wash tubs, tarps, mesh mat, disposal bags, ziplock bags, plastipaper spray suits (plain paper useless in bush), towel, alcohol wipes ...



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Nutshell version: Entering an infected site

Establish a Green Line:

Clean
(arrival)
side:

Prep and suit-
up here.



Dirty (site-
entry) side:
Minimise gear
taken across
line (all must
be disinfected
on exit)

Only take items over the line that will be used.

Same line will be used on way out.



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Nutshell version: Exiting an infected site



Remove suit, decontaminate self and gear entirely before crossing to clean side of line



Wash and bag re-usable gear for final wash at base. Off-site disposal of waste.



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Nutshell version: Departing an infected site

Disinfect work area



Disinfect vehicle:

- interior 70% metho spray;
- exterior 10% Farmcleanse, including wheels, arches, chassis if possible.

Vehicle decontamination protocol (generic) at http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0007/249478/procedure-decontamination-vehicles.pdf



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Onerous, huh?

- Yes, but on NSW Central Coast, DECCW reserves staff and the Bush Regeneration industry (commercial and volunteer) are not only implementing such protocols, they are driving them.
- Given transmissibility and longevity of Myrtle Rust spores, such site protocols are necessary unless and until there is a well-founded State-wide decision that the disease is pandemic and there is nothing further to be gained by bushland biosanitation (NB: this is unlikely ever to apply to production areas).
- Local decisions to ignore protocols, based on resource constraints, ≠ 'well-founded decision'.



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Best practice and problems in the Bush Regeneration industry on the NSW Central Coast

Best practice examples from the Bush Regeneration industry on NSW Central Coast (protocols unpublished):

- Gecko Environmental Management (Principal: Paul Malligan, ph 0412 667 048, Gecko0@optusnet.com.au)
- Bangalow Bush Regeneration (Principal: Damien Moey, ph 0401 648 821, web www.bushregeneration.net.au/, email damienmoey@gmail.com)



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There are big issues for bush regenerators, consultants and contractors in general, and volunteers:

- Regional reserve-area managers, and firms like those above, are currently wearing the time-and-money costs without variation to current budgets or contracts.
- Employers and individuals are wearing costs of gear and extra laundry.
- Who will effectively champion an increase in budgets/contract fees to support such best practice? (No-one at present).
- If Myrtle Rust becomes truly pandemic in east-coastal Australia, attempts to maintain such protocols will eventually break down, but it is important that we try to avoid a piecemeal collapse of the effort.



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Reportage - general

State/Territory Biosecurity Agency Contact Numbers:

- Queensland – 07 3239 3980
- Western Australia - (08) 9334 1800
- South Australia - 1300 666 010
- Victoria - 13 61 86
- Tasmania - (03) 6233 3352
- Northern Territory - (08) 8999 2118
- New South Wales - 1800 084 881

Any business despatching Myrtle Rust host material interstate must follow the import or movement controls of the receiving jurisdiction.



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Movement Controls (as at February 2011)

Jurisdiction	Myrtle Rust Movement Controls
Queensland	Restrictions on Myrtaceous plants from an infected jurisdiction
NSW	Pest Quarantine Area (Gosford/Wyong)
Victoria	Restrictions on Myrtaceous plants from an infected jurisdiction
South Australia	Restrictions on Myrtaceous plants from an infected jurisdiction
Northern Terr.	Restrictions on Myrtaceous plants from an infected jurisdiction
WA	Restrictions on Myrtaceous plants from all Australian jurisdictions
Tasmania	Restrictions on Myrtaceous plants from all Australian jurisdictions

Note: WA and TAS will not accept plants of the Myrtaceae family irrespective of treatment.

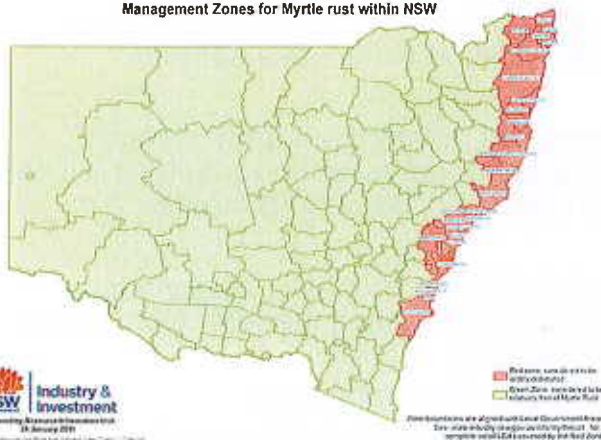


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NSW I&I (= DPI) management zones and reportage

Management Zones for Myrtle rust within NSW



Green zone: relatively free of Rust.
Red zone: Rust widely distributed.
Zones dynamic, will change with spread of rust. Currently the red zone includes all coastal LGAs from Shoalhaven City Council to the Queensland border.

In the red zone, report new hosts (not on I&I list) - photos to biosecurity@industry.nsw.gov.au.
In the green zone report any suspect detection to the NSW Myrtle Rust Hotline 1800 084 881, or email photos to biosecurity@industry.nsw.gov.au

Report detections in bushland in either zone directly to landholder (e.g. National Parks, local council) with photos, host species info, and coordinates.

Use biosecurity protocols if moving risk items from the red zone to green.



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Elephants in room # 1-4



- **Maintaining motivation** for bushland biosanitation will be increasingly difficult as disease spreads.
- **Costs:** Area managers, contractors and voluntary groups will need budget/fee variation (or **subsidy**) if we expect them to implement bushland protocols.
- **Information loss** is likely (re disease behaviour, species resistance and response, general biodiversity impacts), unless we can:
 - maintain motivation for monitoring
 - establish either central repositories or effective national information-capture networks.
- **Loss of motivation for sanitation/monitoring will mean:**
 - poor info about current Rust variant, hence poor response strategies
 - unable to distinguish/track future variants arriving.



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Elephants in room # 5

Issues for collecting institutions (herbaria, museums, BGs):



- Work-practice changes:
 - trip planning (allowing more time)
 - dealing with biosanitation during multiple-site collecting
- Seed-collection and seed-bank biosanitation
 - rust spore longevity under seed storage conditions is not known)
 - Non-Myrtaceous seed-lots may carry spores
- Maintaining staff & student adherence to bushland biosanitation protocols



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