Threatened Species Recovery Hub

National Environmental Science Programme

Preventing extinction from myrtle rust and habitat loss: saving our most imperilled plants

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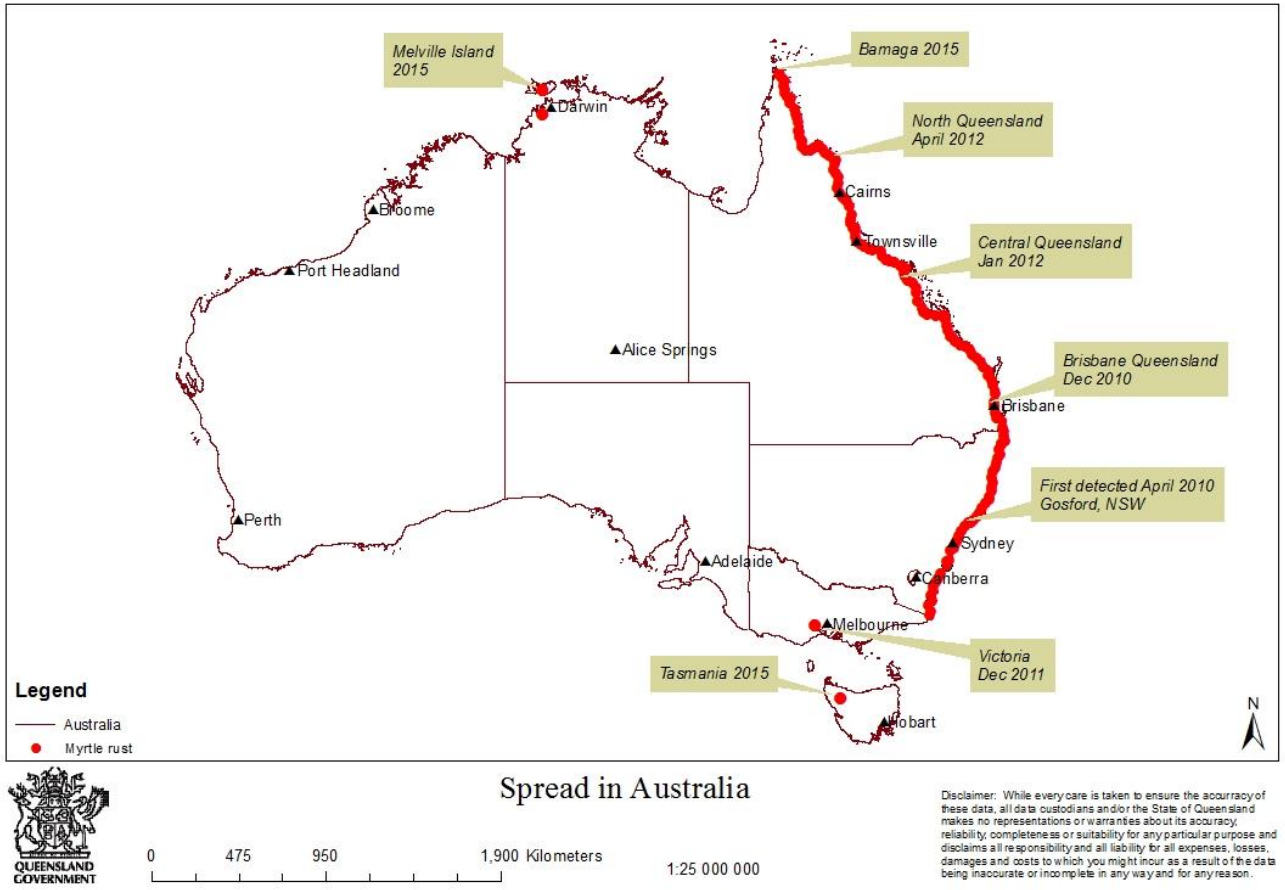
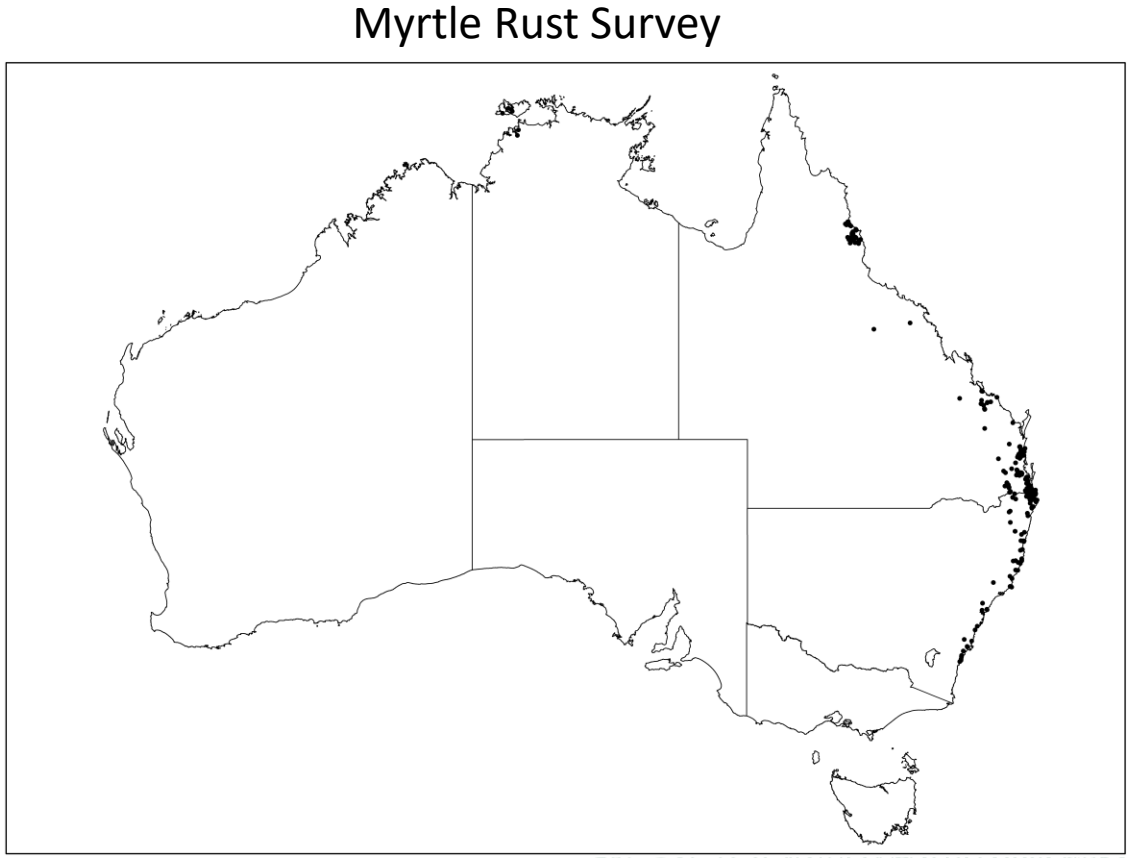
Myrtle Rust: what is it?

- Plant disease caused by the fungal pathogen *Austropuccinia psidii*
- Affects Myrtaceae
- Neotropical origin
- Several different strains globally
  - Australia has the pandemic strain
- Introduced to Australia in 2010- spread rapidly
- Can infect >358 native species across a range of habitats
- Kills growing tips, young leaves and reproductive tissue



Myrtle Rust: Impact in Australia

- Early work - Geoff Pegg, Angus Carnegie and Bob Makinson
- No broadscale surveys of the impact on Australian plants
- Building a database of MRs impact on Australian plants
  - Incorporates existing data, expert observations and field surveys from around Australia
  - >620 populations comprising 460 field surveys
  - >106 species



Myrtle Rust: Impact in Australia

- Impact is species specific and ecosystem specific
- Worst impacted are rainforest/margins myrtle species
  - Mainly in the tribes Myrteae and Kanieae
- Severely impacts
  - range restricted endemics
  - once common-wide spread species
  - keystone ecological species
  - culturally significant species
- Also can infect paperbark and eucalypt species
  - Particularly the regeneration after disturbance/fire

Myrtle Rust: Impacts in Queensland

Range restricted endemics

Gossia lewisensis, Mt Lewis.

Gossia inophloia, Mt Glorious.

Gossia gonoclada, Logan River.

Myrtle Rust: Impacts in Queensland

Once common and wide spread species here in SEQ

Rhodamnia rubscens, South-east Queensland.

Rhodomyrtus psidioides, South-east Queensland.

Myrtle Rust: Impacts in Queensland

Keystone ecological species

Melaleuca sp. Particularly fresh growth after fire or reforestation plantings

Myrtle Rust: Impacts in Queensland

Keystone ecological species

Ristantia pachysperma The Boulders, Babinda and Russell River NP

Myrtle Rust: Impacts in Queensland

Keystone ecological species

Ristantia pachysperma The Boulders, Babinda and Russell River NP

Myrtle Rust: Impacts in Queensland

Keystone ecological species

Tristaniopsis exiliflora Golden Hole, Russell River.

Myrtle Rust: Impacts in Queensland

Keystone ecological species

Tristaniopsis exiliflora Golden Hole, Russell River.

Myrtle Rust: what can we do?

Misconception that we can't do anything

- Monitor and assess the ecological impact
- Prevent other strains from entering Australia
  - Can have different host ranges including eucalypts
  - Increase the chance of sexual recombination
- Translocation outside of MRs range
- Resistance breeding and rewilding of resistance genotypes
- Seed/germplasm storage

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