

An integrated approach to managing a plant pandemic: a case example involving myrtle rust in Australia

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Myrtle rust, caused by the plant pathogenic fungus *Austropuccinia psidii*, was accidentally introduced into Australia in 2010 and has since spread throughout the full extent of the east coast, across northern Australia to the west coast of the continent, and to Lord Howe Island and New Zealand. It attacks species in the family Myrtaceae including *Eucalyptus*, *Syzygium*, *Metrosideros*, *Melaleuca* and a broad range of rainforest species, many of which are extremely susceptible to the disease. Several affected species have become critically endangered, and a number are on an extinction trajectory due to the impact of the disease. Botanic Gardens of Sydney, working with state conservation agencies in NSW and Qld, and a number of universities, research organisations and botanic garden partners, recognised the need to focus on a response that ensures species likely to be impacted by Myrtle rust have the best chance of survival into the future. This response, by necessity, is multipronged focusing on influencing program and policy design, securing genetically diverse germplasm, determining effective strategies for long-term storage of that germplasm, characterising variation in resistance to inform breeding and developing metacollections based on genomic information. In this talk we will highlight the technical challenges involved, the value of combining field knowledge, conservation horticulture, advance germplasm conservation and genomic advances, including how critical it is to underpin these actions with a broad, inclusive and collaborative approach to achieve the best possible conservation outcome.