

Forest Biosecurity and Resource Assessment –Winter 2011

INTRODUCTION

Impacts of biosecurity incursions and of endemic pests and diseases are consistent problems for Australia's forest industries. They incur costs for containment and control measures and cause losses of production and economic activity. Maintaining biosecurity for forest industries is a key challenge for governments worldwide and for Australia, in particular, with its unique environment and biodiversity. The Forest Health Unit is committed to minimising these impacts on the 2.4 million ha of native and planted forests in NSW through three key outcomes:

1. tactical R&D to enable responses to immediate forest health challenges from exotic and endemic pests and diseases;
2. strategic R&D that anticipates future and emerging biosecurity threats; and
3. underpinning science to inform risk analysis and policy development.

Forests are also a perennial, commercial crop, requiring resource assessment and yield modelling for future forest planning and sustainability.

We also develop and provide technologies for integration into Forests NSW planning processes.

RESEARCH CAPABILITIES

Our R&D in forests biosecurity and resource assessment is delivered from the Forest Science Centre at West Pennant Hills primarily through a Service Level Agreement with Forests NSW and also through collaborative projects with other groups within the forest sector. Our focus includes:

- » Develop and facilitate adoption of scientific solutions and better management practices for pests, diseases and weeds in commercial forests (Forest Health & Biosecurity).

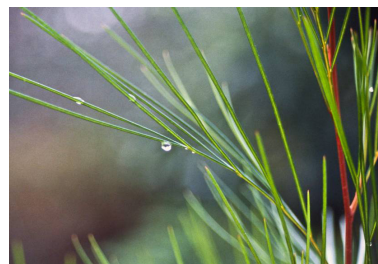
- » Systematic aerial and ground surveillance in NSW forests for major pests and diseases and to assess nutrient status (Forest Health and Biosecurity).
- » Forest disease diagnostics, supported by a significant curated collection of forest pests and diseases (Forest Health and Biosecurity).
- » Application of remote sensing technologies to forest yield modelling forest inventory management, hazard rating and forest health assessment (Forest Health Surveillance).

PROJECT UPDATES

ADOPTION OF NEW AIRBORNE TECHNOLOGIES FOR RESOURCE INVENTORY AND FOREST HEALTH IN NSW SOFTWOOD PLANTATIONS (2011–2013)

INTRODUCTION: Systematic assessment of commercial forest plantations is essential for predicting current and future stand volumes and for management that will maximise returns. A study on 5,000 ha within the Green Hills State Forest is examining the application of remote sensing technologies for these resource and health assessments.

FINDINGS: Data from airborne lidar scanners provide accurate estimates of forests at both a stand and individual tree level. The remote sensing technology measures plantation resources at a scale not previously possible and will reduce the reliance on traditional, time-consuming on-ground tree measurement. An example of its application was a risk analysis of imagery which revealed that it is 17-18 years before drought stress caused significant losses within *Pinus radiata* plantations in southern NSW if they are left unthinned.



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PARTNERS: Forest & Wood Products Australia (remote-sensing); DAFF and CSIRO (*radiata* drought mortality)

CONTACT US

For more information on our full portfolio please contact Christine Stone (02) 9872 0132 or christine.stone@industry.nsw.gov.au

FOREST HEALTH SURVEILLANCE PROGRAM (ONGOING)

INTRODUCTION: Systematic aerial and ground surveys are conducted annually on the majority of NSW pine and hardwood plantations for pest and disease damage, weeds, nutrient imbalances and climatic disorders. The data are used to provide forest managers with recommendations on remedial or control actions and ongoing management of biological control programs. Data are also used for social, environmental and economic reporting by Forests NSW.

FINDINGS: Survey results have provided Forest NSW Regional managers with GIS risk maps that highlight specific pest and disease outbreaks. These have included sires wood wasp, needle blight, and stem canker disease, and other impacts (such as wind damage). This information allows more targeted and timely forest management practices to minimise impacts.

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PARTNERS: Forests NSW



MANAGEMENT OF MYRTLE RUST IN NSW (2011–2013)

INTRODUCTION: In April 2010, Myrtle Rust was detected on the Central Coast of NSW. In outbreaks such as this various units within NSW DPI work together and with other Government agencies towards a successful outcome.

FINDINGS: Forest Health staff played a key role during the early phase of the response (April to July), are continuing to provide ongoing technical expertise, and continue surveys and host testing on more than 100 species for Myrtle Rust in native forests and plantations. A national R&D program is now under development to help understand the consequences of myrtle rust for industry and the environment and to identify effective treatment options.

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IMAGE: Myrtle Rust, advanced symptoms



PIS&R PROJECT UPDATES