



R&D Works – March 2017

Welcome to our first edition of the R&D Works newsletter for 2017.

This month our stories include studies showing that low-impact logging techniques to harvest biomass result in few long-term impacts on forests; an FWPA funded project on the discovery and application of DNA markers for resistance to Teratosphaeria leaf disease in Blue gums; CSIRO research showing Australia was already experiencing the effects of climate change with record-breaking heat becoming commonplace, leading to longer fire seasons; the next generation prototype of an automatic tree planting robot; an innovative new engineered wood panel, Mass Plywood Panel, that is an alternative to cross laminated timbers for multi-storey buildings; and the development of an 'optically transparent wood' useful for windows and solar panels.



I do hope you enjoy reading about these exciting research projects and their applications.

A handwritten signature in black ink, appearing to read "Chris Lafferty".

Chris Lafferty
R&D Manager, Forest & Wood Products Australia

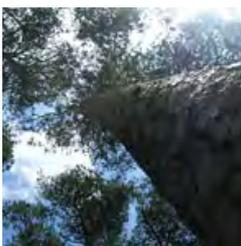
Main News



High speed gene mapping can improve Teratosphaeria disease resistance in Blue gum.

This FWPA-funded research used newly developed genome sequencing techniques to find trees in large populations of plantation Blue gum (*Eucalyptus globulus*) in Tasmania and Western Australia that have genetic differences (i.e. alleles) that give them resistance to Teratosphaeria leaf disease (TLD).

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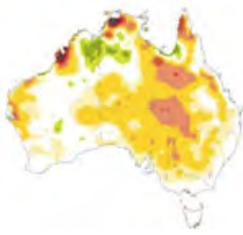
New biomass harvesting techniques to minimise impact
A set of newly published studies evaluated nearly 40 years of data on the impacts of biomass utilization on soil, tree, and plant recovery and found minimal impact using certain forest harvesting techniques.

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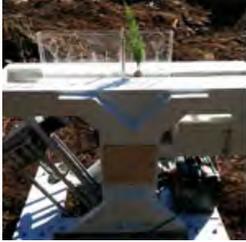
Australia: State of the Climate 2016

Australia is experiencing more extremely hot days and severe fire seasons according to the findings of a new climate report. The biennial CSIRO and Bureau of Meteorology State of the Climate report draws on the latest climate monitoring and science to show how our climate is changing.

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Forest Growing



Tree planting robot - next generation

The team behind a prototype automatic tree planting robot, from Canada's University of Victoria, have developed a second generation of their TreeRover device. Better digging ability for tough soils has been a key improvement in the system.

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Unmanned helicopters on a data collection mission

In many forests, the collection of information pertaining to the wood remains neglected, due to a shortage of specially trained personnel, specific expertise, funding, or appropriate technology. A project funded by the Austrian Research Promotion Agency (FFG) aims to put small, unmanned helicopters to work, measuring the parameters for the forest inventory.

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New Product Innovations Markets



New EWP to challenge CLT

An innovative new wood product, Mass Plywood Panel (MPP), is hitting the market thanks to Freres Lumber. MPP is currently being tested and refined through a partnership with Oregon State University and the new Center for Advanced Wood Products.

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Putting bark to better use

In the future bark could be used as a raw material for a bio-based wood preservative. A new collaboration between the Natural Resources Institute Finland (Luke) and the Universities of Eastern Finland and Oulu is looking to make this a reality.

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Wood Harvesting Transport and Logistics



Designing mobile anchors to yield

Cable logging systems require either fixed or mobile anchor support(s) to maintain safe and effective yarding of materials in steep terrain. A new Oregon State University study has outlined an approach, where mobile anchors serve as a tension relief system for a skyline, which may enable safer use of yarding systems.

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Other Information

Wooden glass for windows and solar panels

Researchers from Sweden's Royal Institute of Technology earlier



this year announced the development of an “optically transparent wood”. Now, in a new study, engineers at the US-based University of Maryland have demonstrated that windows made of transparent wood could provide more even and consistent natural lighting and better energy efficiency than glass.

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Using nature's own solvents for the preparation of pure lignin Lignin can now be efficiently and cost-effectively separated from sawdust, by using eutectic solvents. VTT Technical Research Centre of Finland has developed solvents using which 50% of the lignin from wood can be extracted in a pure form that retains its natural chemical structure during processing.

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Wood fibre bag may replace plastic bags

Finland-based entrepreneurs have come up with a wood-based bag in response to the continued environmental impact from plastic bags. Paptic has looked to combine the best aspects of plastic and paper in creating the new product.

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