

New seed orchard advances - *E. nitens* genetic improvement program

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A new generation of *E. nitens* genetic material has been captured and assembled into a new seed orchard established at Castra in north-west Tasmania. This new orchard signifies the continuing advancement of the *E. nitens* genetic improvement, and highlights the value of this research program to increasing the value and productivity of Forestry Tasmania plantations.

Eucalyptus nitens plantations make up 75% of the Forestry Tasmania eucalypt plantation estate because this species is well suited to rich soils and high rainfall, and is also cold-tolerant. It is therefore planted above 300 m altitude, where it has an advantage over the other major species, Tasmanian blue gum (*E. globulus*). The *E. nitens* breeding program has been in operation for almost 30 years and is building on a very large foundation of trials and experience held by Forestry Tasmania. Since 2003, more than 20 trials have been established, including progeny tests, species comparisons, genetic gains trials and the ongoing development and maintenance of existing seed orchards. These existing orchards are now producing seeds, with the Oigles Road *E. nitens* seed orchard producing around 12 000 000 genetically improved seeds for use in Forestry Tasmania plantations and also for commercial release. This annual harvest of seed is valued at more than \$600 000 and is of a quality well-regarded by other growers of *E. nitens*.

The new orchard at Castra signifies a further major advance in deploying the superior genes developed in the breeding program, which aims to continually improve tree quality in terms of form, wood quality and growth rate, linked to Forestry Tasmania's management objective of high-quality solid-wood production (sawlogs and veneer logs) from its eucalypt plantations, with genetics also tailored to other end-uses such as pulp production.

This genetic improvement research will deliver crucial further knowledge and understanding about *E. nitens*, its development, and ways to optimise its genetic makeup.

Dean Williams inspects a seed orchard tree for flower buds

