



Forestry Trials

My son James had completed his first year studying forest management in Rotorua, and on the nursery we had completed spring seed sowing. So three generations of the Appleton family headed south for a busman's holiday, attending the Douglas fir cooperative meeting in Gore. It was well attended by 45 members from across the forest industry. The field trip day was hosted by Ernslaw One forestry, visiting a number of forest sites, including their seed orchard.

Of special interest to Eric was the Rankleburn Douglas fir provenance trial. In 1959 as a young forester employed by Forest Research, Eric was responsible for the supervision and assisted in the planting of a number of trials, including the Hanmer and Rankleburn trials. These were large replicated Douglas fir trials covering a wide range of its natural habitat in the Pacific Northwest. The seed had been collected in the U.S.A. from different seed zones from south of San Francisco, up the coast range to the Canadian border. A lesser number of interior seed zones were included.

Each provenance was planted in a 22m x 22m plot and most replicated 2-3 times on each site. New Zealand collected Kaingaroa seed was used as the control as subsequent results have been benchmarked against this seedlot for comparison purposes.

Trials were established in Kinleith, Kaingaroa, Gwavas, Golden Downs, Hanmer and Rankleburn. The trials were thinned to 550 stems per hectare and measured at age 38-40 and again at 45-47 years. The 10 best coastal provenances from the Californian and Oregon coastal range were 33% greater in yield than the Kaingaroa control. The dry inland high altitude Californian seedlots were up to 15% poorer than the control. Fort Bragg, Jackson State Forest provenance was one of the best performing and the trial has shown that selection of the most suitable seed sources has a dramatic effect on productivity.

When collecting or purchasing seed for the 500 species of trees we grow every year, we pay special attention to selecting the most appropriate collection areas or seed zones. New seed trees are constantly trialled in the nursery each year, looking for improvements in vigour, shape and autumn colour, as well as general health and disease resistance.



*Top: Eric (1957) on his 197cc James at F.R.I. Men's Camp.
Middle: Thinned Douglas fir provenance trial 52 years old.
Bottom: James, Eric and Robert in a Californian provenance plot, Rankleburn, November 2011.*

1959 - 2011

1957 *Larix decidua*

Eric had also planted the species trial in 1957 at Naseby forest in the Maniototo, Central Otago. Situated at 2000 feet (600m), it is one of the coldest and driest forests in New Zealand. The species trial is part of the 500 hectare Ernslaw One Naseby Forest recreation area, allowing public access around the coalpit dam and Mt Ida water race. The species trial showed how suitable *Larix decidua* is to the area, with *Abies grandis*, *Pinus lambertiana* and *Pinus resinosa* being the surprise performers.

Naseby is a great holiday destination for those interested in outdoor pursuits, and the Royal Hotel and the Danseys Pass Coach Inn offer authentic old time accommodation. The Danseys Pass road to the Waitaki Valley is a real back country experience.



Above: *Sequoiadendron giganteum* at Beaumont beside the Clutha River
Bottom: Coalpit dam at Naseby. *Pinus nigra* v. *laricio*, *P. ponderosa* and *Larix decidua*



PROVENANCE TRIAL

A replicated field trial, comparing the performance of trees grown from seed collected from different parts of a species' natural geographical range.

