

# Realising the value of old trials for native trees

Greg Steward

In 1876, Captain Campbell Walker described the role of New Zealand's state forests as 'the formation, protection, and gradual improvement of the public forests to make as much timber, and other produce as possible for the requirements of the country and for export trade, and thereby to produce as large a surplus revenue as is compatible with the maintenance and increase of their productive powers.'

Increasingly, foresters in New Zealand are being required to meet goals that are not just financial. Planted forests are also expected to align to the nations and landowners' values and environmental priorities, visual aesthetics, etc. Indeed, with most of the old state forests reverting to iwi ownership the cultural values of forests are becoming increasingly important for the unique opportunities and values that they might provide.

Commercial forestry in New Zealand began with the harvesting of native forests. However, as early as the late 1800s we were importing timber to meet local domestic needs as native forests rapidly disappeared. The second age of forestry was the search for potential exotic species that culminated in the great stands of pine, from which New Zealand acquired a fine reputation amongst the world's forestry industry.

It therefore seems logical that developing our own natives is a way of completing that circle. Perhaps this is the dawn of the third age of forestry in this country? The development of radiata pine is now at the molecular level, while species diversification offers greater security of timber supply in the presence of new or invigorated diseases and greater choice for those who buy and use timber. It also potentially presents forest growers with the opportunity to engage, or re-engage, with the industry.

New Zealanders' expectations of growth and productivity from our native species have generally been pretty miserable, backed up by years of bad press and ambiguous anecdotal observation. So where do those with an interest in native production forestry go for data on which to make sound investment decisions? Happily, the New Zealand Forest Service (NZFS), its predecessors and others were quietly beavering away establishing trials of a range of species from as early as the mid-1800s.

Some of the earliest native species plantings that approached an industrial scale were the tōtara intended to replace the Puhipuhi kauri forest destroyed by fire in 1888. Remnants of those plantings still exist within

a landscape now dominated by dairying. A 1919 review of kauri forestry by Sir David Hutchins observed considerably better growth than many of its European and North American alternatives. His recommendations for future sustainable harvest of kauri initially fell on deaf ears until foresters like Ron Lloyd and the NZFS Kauri Management Unit and Auckland Regional Authority began a suite of long-term trials.

During the 1950s and 1960s large areas of podocarp planting trials were established by the Forest Service in the Central North Island under the guidance of Tony Beveridge. These include many tens of thousands of rimu, kahikatea, tōtara and others planted throughout Woodhill, Kaingaroa and many other forests. Similar activities with beech and podocarps were also underway in the South Island. However, the funding to continue with assessments and appropriate levels of silviculture for these trials quietly disappeared as priorities changed with the disestablishment of the Forest Service in 1987.

In today's terms, if we were to replicate these trials it would not only require a significant investment in time but also in dollars – easily in the tens of millions just in seedling costs alone. But would we? Most of these early NZFS trials still exist, their records are archived, and in some cases the individuals who know where they are also still exist – although they are increasingly becoming thin on the ground.

Despite the majority of these trials never receiving the management they required to achieve maximum productivity, they can and still do yield useful information. Recently, the opportunity to use data from trials established in 1936 was incorporated into a growth and yield model for plantation-grown kauri. Also, samples from planted tōtara over 110 years old have yielded valuable information on growth and wood quality.

These are just some of the numerous examples of far-sighted individuals and organisations acting on New Zealand's behalf who took a punt on the future of the country and the forest industry. Their investments in time, energy and public finances would be wasted if this information is not captured and made available to those who want and need it. A good beginning would be to identify these trials and begin to prioritise those we need to re-measure, resurrect and/or to protect.

*Greg Steward is a Scientist with Scion and has worked in the area of managing and establishing native forests for over 40 years. Email: [greg.steward@scionresearch.com](mailto:greg.steward@scionresearch.com).*

