

GUEST EDITORIAL

The Purukohukohu Experimental Basin was set up in 1968 under the auspices of the International Hydrological Decade as a site for long-term research into the hydrology and erosion of yellow-brown pumice soils. Three Government departments – Lands and Survey (owners of the land), Water and Soil Division of the Ministry of Works, and the Forest Research Institute of the New Zealand Forest Service – were the principal partners in this co-operative project. Staff of other Government organisations and the University of Waikato have also collaborated on aspects of the research carried out. We welcome contributions by staff of the former Water and Soil Division to this feature issue of the Journal.

The Forest Research Institute's involvement at the experimental site was mainly in the catchment planted with *Pinus radiata*, the Puruki Experimental Catchment. Dr D. S. Jackson was responsible for establishment and management of the Puruki Catchment and for initiating a research programme to investigate not only the water use of the pine forest, but also its growth and dry matter production. The research programme included annual above-ground biomass harvests and the maintenance of a sophisticated meteorological station. Bob Jackson is to be commended for his commitment and meticulous planning in laying the foundations for much of the work reported here. Since Bob retired in 1982 the programme has been the responsibility of the Tree Physiology and Stand Productivity research group. Staff of several research fields at the Institute have undertaken research at this site and one of the strengths of the work reported is the integration of a range of disciplines and studies at the one site. Another notable feature of the work reported here is that it covers a period of 15 years during which time the *P. radiata* stands have passed through the phases of establishment, canopy closure, thinning, and response

to different intensities of thinning. The intention is to continue to monitor growth, on a 5-yearly basis, for the remainder of the rotation, i.e., to the year 2000.

The data obtained have few published parallels in providing a comprehensive description and quantification of dry matter production of a series of forest stands of differing spacings over half the rotational age. These data and the models developed are aimed at better management of the growth of forests in New Zealand (the data do not apply solely to *P. radiata*) and better land and water management. This publication is an important contribution in reporting accurate and detailed measurements of growth and the processes associated with growth under closely monitored conditions to provide "bench-marks" for future reference where conditions may have changed, e.g., climatic conditions whether from pollution or increased carbon dioxide and temperatures. The need for high-quality information of this type is becoming increasingly recognised internationally and the information presented in this series of papers is in demand by the international scientific community.

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