11.1 DIEBACK - THE HISTORY OF THE MOUNT COOKE PINE PLANTATIONS
by JJ Havel Forests Department

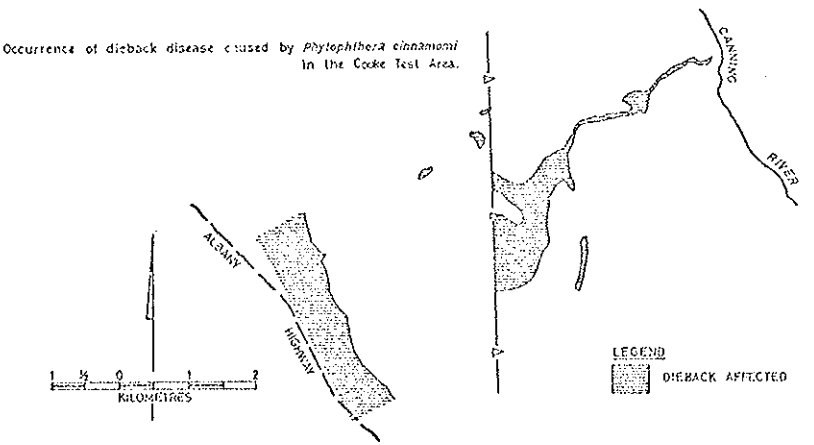
Although the exact record is not available, it is highly probable that dieback disease was brought into the broad, swampy valley at the foot of Mt Cooke during modification or upgrading of the Albany Highway. Post war logging, which is documented, presumably took the infection from the western half of the valley up the eastern slope of the valley and the lower slopes of Mt Cooke. Construction of the first Muja-Perth power line extended the infection from the Albany Highway onto the far, eastern slopes of Mt Cooke, from where it descended on a broad front into the valleys below.

By the mid-sixties, when the cause of dieback disease was discovered, a considerable area of forest around Mt Cooke was therefore severely damaged by the disease. At the time, pine planting was an accepted method of rehabilitation. The dieback-affected valley floor and lower slopes between Mt Cooke and the Albany Highway were therefore converted to plantations, mainly of Pinus pinaster, but with smaller areas of other species. In the earliest experimental plantings it was observed that the seedlings on the valley floor failed to survive, even after some drainage and mounding. Specimens of soil and soil water indicated that high salinity exceeding 1300 ppm, was at least a contributing factor. In the ploughed area, saline ground water was welling up under pressure in the form of "mud-volcanoes".

This brought to the attention of foresters and hydrologists the fact that salinity was not an exclusive problem of agricultural clearing in low rainfall areas, but that it could become a problem in the medium rainfall zone, of up to 1100 mm/year, with the dieback disease, rather than a deliberate human effort, being the cause.

Currently, the upwelling of saline ground water has ceased. No doubt the increased transpirational activity of the pines, as they increased in size, has contributed, but there has also been a succession of years with below average rainfall since the planting. From corresponding but more precise work on the coastal plain it can be asserted that the pines of this size are capable of fully utilizing rainfall of at least 800 mm/year.

Planting of pines in the jarrah forest has now largely ceased due to the high cost of fire protection, and the relatively poor fertility of the soils.



BATINI REPORT 11

WATER RESOURCES AND LAND MANAGEMENT ISSUES IN THE DARLING RANGE

September, 1979

WATER RESOURCES AND LAND MANAGEMENT

ISSUES IN THE DARLING RANGE

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