

expiration of the old concessions and leases about this time (which then brought most of the forest area under working-plan control), also provided the Department with the opportunity to adjust demand and supply closer to the sustainable yield covered by the 1929 General Working Plan.

At the end of the 1930s, the emphasis shifted to fire protection. Because it was within the capability of an untrained work-force and because it was essential work, the unemployment relief work had been directed partly towards extending fire-protection measures. But work on forest treatment had itself considerably improved access and communications in the forest, and motor vehicles were becoming available to replace foot, horse and motorbike. A bad fire year in 1936-37 had emphasised how vulnerable the valuable forest treatment work of the depression years was to fire and provided the motivation for a drastic overhaul of fire legislation, which was thirty years out of date. Since its establishment in 1933 the fire weather research station at Dwellingup (the first of its kind in Australia) had provided considerable information on the influence of various meteorological factors on fire behaviour and fire weather was being more confidently forecast and fire hazard more accurately estimated. The imaginative use of tall trees for fire towers had considerably enhanced the detection system.<sup>57</sup> Two decades after its first effective forestry legislation, Western Australia had become a model in Australian forestry for fire-protection organisation and methods.

### **The War and Early Post-war Years**

Kessell was seconded to the Commonwealth Ministry of Munitions in May 1941 as Controller of Timber and in December 1945, without returning to duty with the Department, he resigned to become managing director of Australian Newsprint Mills Ltd in Tasmania.<sup>58</sup> In Kessell's absence, T. N. Stoaate was Deputy Conservator. He had occupied the position of Assistant Working Plans Officer of the Department while on extended leave from the New South Wales Forestry Commission in 1922, had become Assistant Conservator in 1927, and, as a Russell Grimwade Scholar, obtained the post-graduate Diploma of Forestry at Oxford in 1931. He was appointed Conservator to replace Kessell in February 1946.<sup>59</sup> Kessell's position as chairman of the consultative panel set up in 1940 in Western Australia, as in other states, to cope with problems of wood supply associated with the distribution of munitions was taken by Stoaate when Kessell became Controller. The panel was replaced in 1942 by the appointment of A. C. Shedley (then Assistant Conservator) as Deputy Timber Controller. He held this post until 1948, when he became chairman of a Sawmillers Advisory Committee which continued for some years after the war to deal with the many post-war problems.

Owing to the enlistment of forestry and industry workers in the fighting and ancillary services, timber production during the war years decreased.<sup>60</sup> The post-war years saw a long struggle for the industry's rehabilitation. During the war the timber industry had been a 'protected undertaking' and workers in it had established new lifestyles — in towns rather than the bush. The post-war demand for labour and the opportunities for returned servicemen to retrain for more attractive occupations were additional factors affecting a return to pre-war employment levels in the industry. A supply of labour in the form of 'displaced persons' from Europe partly salvaged the situation, as did the advent of power tools for felling and more sophisticated and powerful harvesting equipment. The post-war years also saw an increase in the number of small mills, particularly close to the towns and the city, drawing logs from private forest land. During the war the cutting-off of the supply of plywood from traditional suppliers in the eastern states had led to the establishment of a local plywood industry based almost wholly on karri until the post-war years brought imports of plylogs from the south-west Pacific. Part of the Department's energy during the war years was diverted to the production of firewood for the metropolitan area, particularly using labour from the Civil Alien Corps of internees and prisoners-of-war. With reduced staff and revenue, there was no opportunity for development works and, by the the war's end, there was a large leeway in the works program.

One outstanding post-war requirement was the extension of the fire-control system over the considerable area of forest which was still unprotected, and this was assisted by the advent of bulldozers into forest operations and the availability of motorised equipment left over from the war. Another outstanding requirement was the expansion of coniferous afforestation, which had ceased at the outbreak of war, and a General Working Plan was prepared in 1949 in anticipation of the eventual allocation of loan funds. In 1944 it was decided to control the milling of all species on crown forests under one General Working Plan, and a general plan for jarrah, karri and wandoo to replace the original jarrah and karri plan came into effect on 1 January 1945. The determination of the Department to keep the cutting in the native forest in line with increment highlighted the need for continuous resource and management inventories and, like several other states, Western Australia took advantage of aerial photographs for this purpose (photos, equipment and expertise having become available because of the war). Perhaps the outstanding problem in the post-war years for the Department was the shortage of professional and non-professional staff. Western Australia was probably affected more than any other state by movement of graduate foresters out of the service (though mostly to forestry interests elsewhere), and it was a long time before the professional ranks were filled again. With no