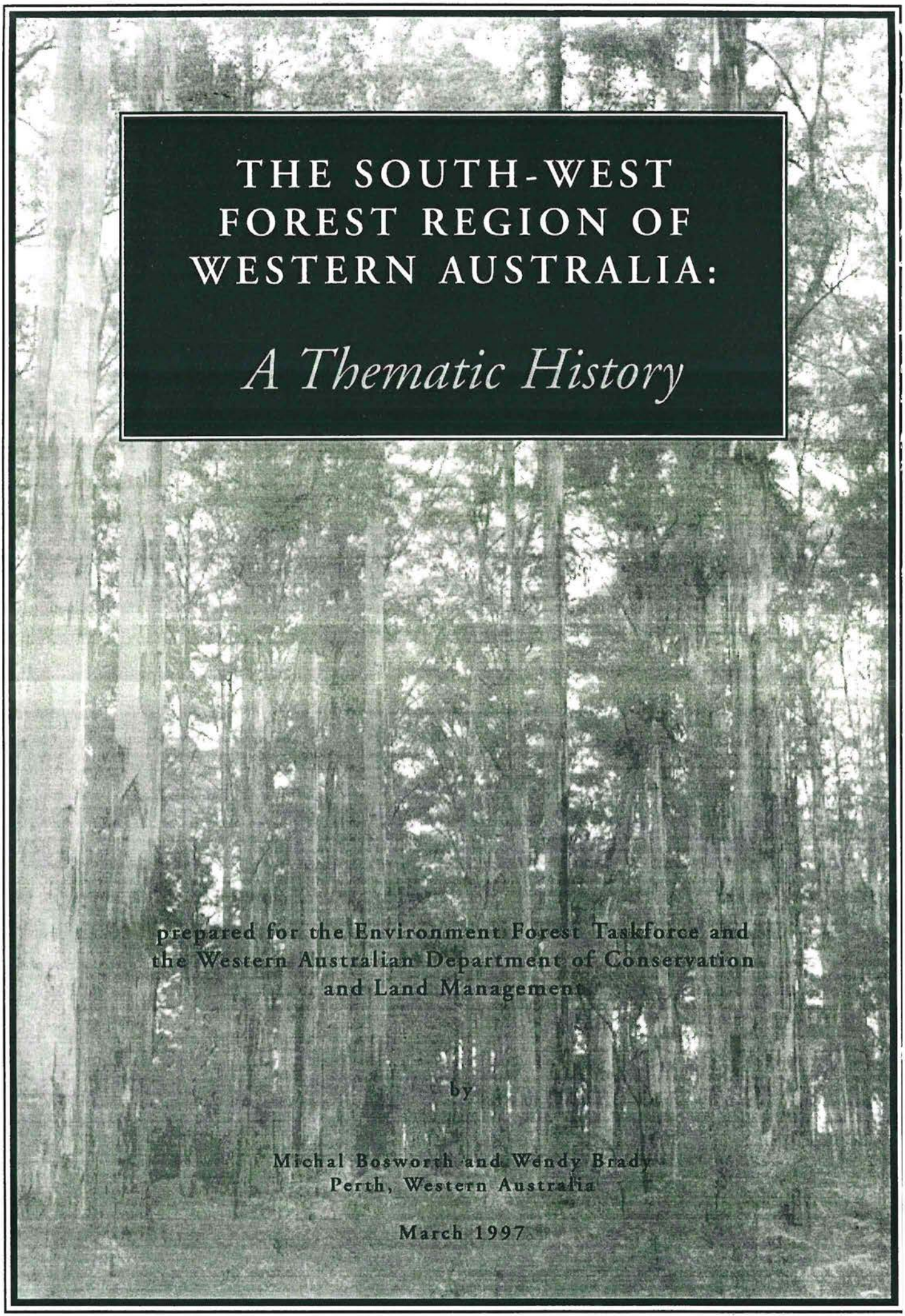

THE SOUTH-WEST FOREST REGION OF WESTERN AUSTRALIA:

A Thematic History

prepared for the Environment Forest Taskforce and the Western Australian Department of Conservation and Land Management

by

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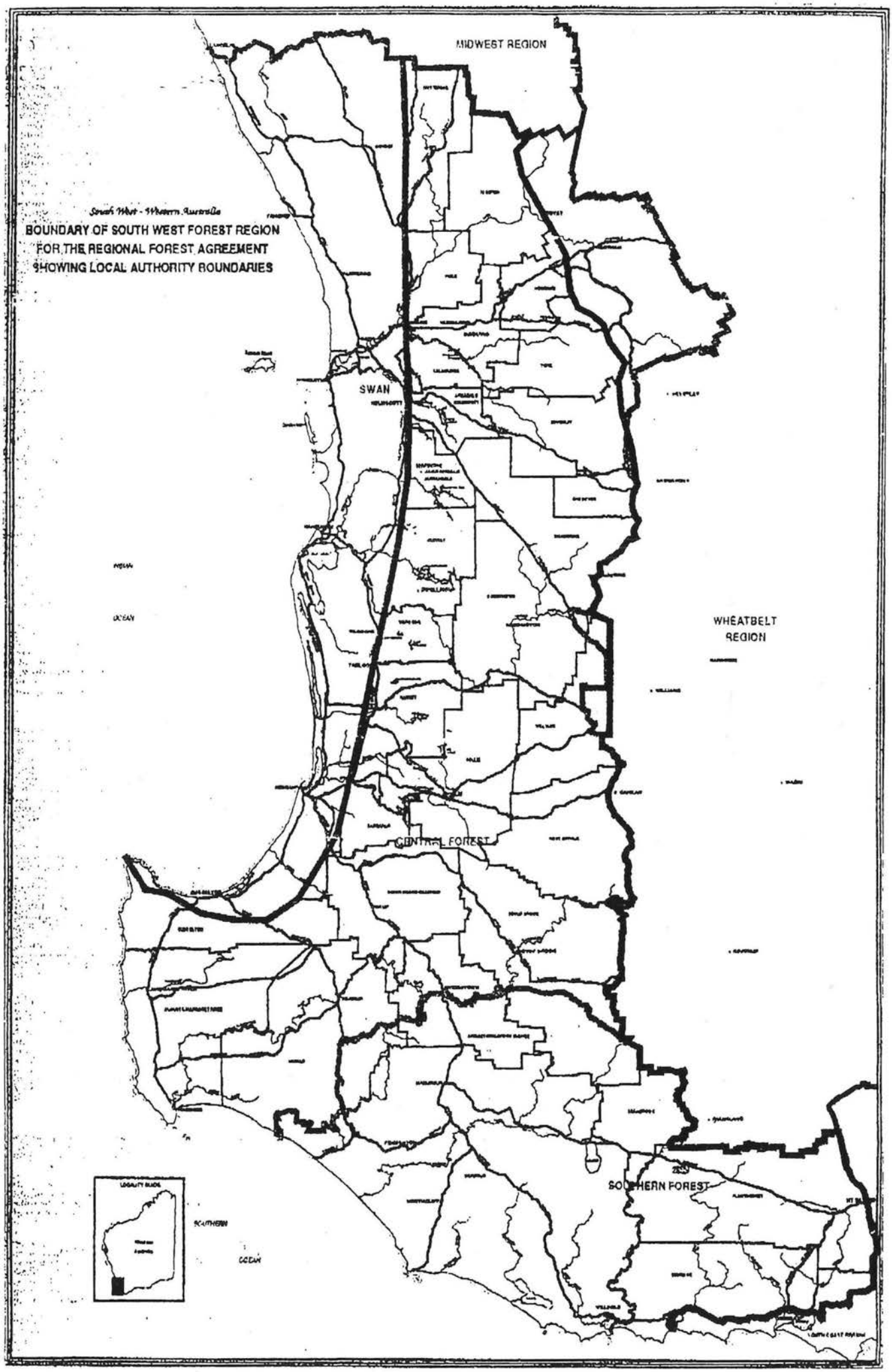
South West - Western Australia
BOUNDARY OF SOUTH WEST FOREST REGION
FOR THE REGIONAL FOREST AGREEMENT
SHOWING LOCAL AUTHORITY BOUNDARIES
MIDWEST REGION
SWAN
WHEATBELT
REGION
CENTRAL FOREST
SOUTHERN FOREST
INDIAN
OCEAN
SOUTHERN
OCEAN

Contents

Introduction

As part of the Regional Forest Agreement between the Commonwealth and Western Australian Governments, a process has begun to assess the non-Indigenous cultural heritage sites within the South-West Forest Region of Western Australia. This thematic history has thus been prepared in response to the National Forest Policy Statement and is Stage 1 of the National Estate Historic Values Identification and Assessment Project.[1] The Environment Forest Group (EFG) and the Western Australian Department of Conservation and Land Management commissioned the report in order to get an historic overview of the State's south-west forests. A thematic approach was chosen and the Principal Australian Historic Themes have provided the structure for our approach.[2]

The forests of south-west Western Australia are special. They contain trees which grow nowhere else in the country and in the far south-west corner these forests are bounded by heathlands which are remarkable also for their great variety of plant life. Sites of cultural significance have been widely interpreted by the writers to mean places where activities which reflected social priorities of the times took place. They include timber towns, rail and tram lines, dams and weirs, tree nurseries and arboreta, forgotten or failed settlements as well as thriving ones. They also include places later claimed for recreational purposes, picnic spots, national parks, bush-walks and certain natural features in the forest areas which are regularly visited and appreciated by members of the public. Activities associated with a way of life now gone, such as wood-chopping, which in its continuing attraction as an event at agricultural shows has become a minor sport, and Arbor Day, which is now less recognisable, but which was responsible for the planting of many trees, as well as plantings associated with war memorials, also form part of the cultural history of the forests.

All forests are living entities, they change with the seasons, they bloom, they decay. The forests of the south-west of Western Australia have also been markedly altered by human intervention. This Report does not focus upon Aboriginal use of the forests except to note that fire-stick farming did affect the look of the forests and the actual

1 The terms of reference have been included as Appendix 1
2 The themes are included as Appendix 2

physiology of some of the plants.[3] Yet Aboriginal land-use influenced European perceptions of the landscape and was later to provide an intellectual foundation for fire control practices. When the understory of the forest was regularly burned by the indigenous inhabitants the land appeared 'park-like' to new arrivals, but as the original custodians disappeared from the land the forests gradually became tangled with smaller plants. During the nineteenth century, European settlers, ignorant of the extent of the forests and the previous methods of land-use, regarded the timber as almost inexhaustible. No formal attempts were made to conserve or manage the forests until the 1890s when the first Conservator of Forests was appointed.

At that time in the history of Western Australia, when there was almost no industry and exports were mostly limited to wheat, wool, sandal-wood and, from the 1890s, gold, timber proved a resource no government could overlook. The extent of the depredations of the timber companies are spelled out in some detail in the first half of this Report. Their traces are still to be found in some forest tracks and new-growth stands of trees.

The twentieth century, wracked as it has been by world conflicts and by huge economic pressures, has seen ripples of these influences wash over most people and most industries. The forests of Western Australia have not been immune. After each war, population moved into the forest, technology used to exploit the timber and the land changed, becoming more efficient and thus having a greater impact upon the indigenous flora and fauna. The twentieth century has also seen a professionalisation of forestry practice which departed from the nineteenth century acceptance of exploitation in order to commit the government to a policy of sustainable use and development of state-owned forests. The first to insist upon the value of research and conservation, Charles Edward Lane-Poole, taught generations of foresters to look differently at forests and trees.[4] Lane-Poole, trained in Europe in the forests of Lorraine, recognised that WA's forests were very different from European trees and required much study. He also saw they stood in grave danger of being over-exploited. As a precious resource forests had to be protected in order that they might thrive and continue to provide income and employment. They should not be cut down at will by private saw-millers who had gained licences for which they had paid a pittance. His policy initatives brought the Forests Department into conflict not only with saw-millers but with general government policy about population growth.

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3 See, S. Hallam, *Fire and Hearth: a study of Aboriginal usage and European usurpation in South-Western Australia*, Canberra, 1975; T. Flannery, *The Future eaters*, New York, 1995 pp.92-98, 208-236 for another argument and Rhys Jones, 'Fire-stick farming', *Australian Natural History*, Sept. 1969, for an elaboration of theories of Aboriginal land-use.

4 *Australian Dictionary of Biography*, Vol. 9, 1891-1939, L.T. Carron, 'Lane-Poole, Charles Edward'.

The story of population movement into and away from the forests lies at the heart of all the cultural heritage sites identified. During the twentieth century there has been much migration across the globe and it is not surprising to discover some influence of these patterns of movement felt even in the remote south-west of a far-off Australian state. Australian governments have played an important role in migration patterns, inviting new settlers to the continent under a variety of schemes. Western Australia, more remote and more under-populated than the rest of Australia, has felt its isolation keenly especially in the immediate aftermath of world conflicts. The establishment of soldier settlement and group settlement schemes after the First World War and the endorsement of Commonwealth mass migration policies after the Second brought the State government into some conflict with conservative forestry practice. The Second World War also brought the beginnings of a massive change in technology. Arguments sustained by the Forests Department, strategies formulated and actions undertaken to resolve the differences existing between population pressures and conservation of forests form a large part of the second half of this Report.

Methodology

The consultants were employed to complete the report within seven weeks. As can be seen from the bibliography the work is based largely on secondary sources as time did not permit either historian to consult widely in the archives. However, little serious historical attention has been paid to Western Australia's forests. We have relied upon one major company history, one or two serious studies of the south-west, some local histories, several heritage reports and other publications which are either biographical, idiosyncractic or narrowly focussed. Necessarily, therefore, we have had to depend upon government reports for much information. The interpretation has been our own.

It is a great pity that we had neither the time nor the resources to include pictorial sources in our researches. Photographs held both in the Battye Library and by the Department of Conservation and Land Management have not been consulted. Maps, too, exist in far greater numbers than we have included. Our brief list of archival resources in the bibliography only hints at the wealth of information which exists in one form or another about the forests of south-western Western Australia.

1829 - 1869
Peopling the Continent

In 1826 the British government established its presence on the south west coast of Western Australia at King George's Sound (Albany). Three years later Captain James Stirling and a group of settlers landed on the west coast near the mouth of the Swan River to establish the Swan River Colony. Between these two tiny settlements lay a largely unexplored area of land, containing the forests of the south west region.

The Swan River Colony was established under a system which granted land to settlers in proportion to the capital invested. Initial settlement was confined to the coastal plain, at Fremantle, Perth, Bunbury, Vasse, Augusta and Albany but the need for land to establish the agricultural and pastoral activities on which the colony was based soon led to exploration of the hinterland. From Perth and Guildford the movement east led across the Darling Range. Named by Captain James Stirling on an earlier visit, the Range was in fact a plateau rising from the coastal plain, extending in a southerly direction parallel to the coast. Expeditions into the Range by surveyors and new settlers revealed an environment that differed greatly from the coastal zone. The hilly terrain, the variations in soil types, the size of the trees and the extent of the forest areas drew comments in their diaries and journals which included references to the hills abounding 'with the finest mahogany' growing on 'stony and apparently inferior land.'[5] Similar comments were made following the exploration of the hinterland of what later became the towns of Bunbury and Albany. The journal of George Grey's 1838 expedition records areas where:

> the whole country is thickly clothed with mahogany trees, so that in parts it may be called a dense Forest. These mahogany trees ascend without a bend or without throwing off a branch to the height of from forty or fifty feet, occasionally much more.[6]

The early surveyors also found in the forest regions pockets of rich soil along the river flats and valleys where rich pasture grasses grew in abundance.

The types of agriculture taken up by the early settlers varied from region to region. Small pockets of rich soil provided the ideal environment to practice intensive agriculture while well-grassed valleys suited the needs of the

5 Diary of John Hardey quoted in I. Elliot, *Mundaring: A History of the Shire*,Shire of Mundaring,1983, p. 11.
6 From the journal of George Grey's 1838 expedition in the Murray/Collie river area, quoted in A.C. Staples, *They Made Their Destiny*, The Shire of Harvey, 1979, p. 42.

pastoralists who required large acreages for grazing stock. Experience soon showed that cattle suffered a deficiency disease when they were pastured in only one area. To overcome the problem pastoralists leased large areas of forest and alternated their stock seasonally between the coast and forest leases. In moving stock between the interior and coastal leases, tracks and trails were created, which in time became permanent routes over which new settlers travelled. Some settled in the forest where they took up small homestead blocks, built houses and fenced small clearings to raise cereal crops and vegetables. The surrounding forest was used for grazing horses, sheep and cattle. These settlers were few in number and widely dispersed throughout the south-west forest region. They included the Muir, Rose, Giblett, Brockman and Scott families, who were over the years, to have a strong connection to the area.[7] Some were successful, especially those who adopted the method of rotating stock between coastal and forest pastures. Others failed. Among these was DeCourcey Lefroy who took up land at Yarkernup in the heart of karri country in 1866. On his property 'Karri Hill' Lefroy cleared 23 acres and planted wheat but the venture was not a success and he left the area.[8] In the next century, Lefroy's abandoned wheat fields, which had reverted to karri forest, were used by the Forests Department to demonstrate the possibility of managing the forest's resources.

Developing Local and Regional Economies.

The economy of the early settlement fluctuated over the first few decades. Imports far exceeded exports and there was a constant pressure to find new commodities to offset this imbalance. In 1849, as the colonists contemplated the desperate measure of requesting convicts from the home government, the *Western Australian Almanack* noted the export potential of local timber proposing that 'the only legitimate resource that the colony possesses is in the quantity and superior quality of its timber....Here then is the future trade of Western Australia.... This wood is to be obtained in any quantities that may be required for years to come.'[9] The quality of the colony's hardwood timber, initially referred to as 'Swan River Mahogany' was recognized from an early date. It had been used to repair H.M.S. *Sulphur* in 1829 and the British Admiralty had ordered 200 tons after establishing its suitability for ship building. Articles made from local timber were also displayed at the Crystal Palace Exhibition in 1851. Jarrah was used, along with other local materials in the construction of housing, roads and bridges and fencing in the formation of the early settlements. Domestic demand further increased during the period of convict

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7 For the history of early settlement by these families see C. Berry, 'The History, Landscape and Heritage of the Warren District', Shire of Manjimup, April 1987, pp. 17-21.

8 Also one who failed and left the district was Adam Lindsay Gordon, later of literary fame. C. Berry, *ibid.*, p.21

9 J. Mills, 'The impact of man on the northern jarrah forest from Settlement in 1829 to the Forests Act 1918', in B. Dell, J.J. Havel and N. Malajczuk (eds.) *The Jarrah Forest :A Complex Mediterranean Ecosystem,* Dordrecht, 1989, p. 236.

transportation, 1850 - 1868. Under this scheme about 10,000 male convicts were sent to the colony from Britain. The injection of capital from the home government which supported the scheme, together with the free labour provided by the convicts, boosted the economy allowing a number of public works programmes to be undertaken. Roads were upgraded, new roads built and work began to link the more isolated areas of settlement like Bunbury and Albany with Perth. All this construction increased local demand on the domestic market but some timber continued to be exported. Between 1850 and 1870, an average of 1,000 loads of timber was shipped annually.[10] A small steam powered saw mill was built at Guildford in the 1840s to process timber but having to cart cut logs long distances over poor roads greatly added to the cost of production, so in the main, timber was cut in saw pits close to the areas where it was needed.[11]

The costs of hauling timber long distances to ports, the lack of suitable port facilities and a limited overseas market for pit sawn timber, restricted the potential for exporting the local product. The colony's small population lacked the capital necessary to improve production. However, the capital constraints that inhibited the development of jarrah saw milling did not apply to sandalwood which required little capital. A light wood, the sandalwood tree grew to a height of about one and a half metres, was easy to harvest with simple tools and could be transported by spring cart or bullock wagon through trackless forest. As markets were established for this product it provided a cash crop, a means by which colonial incomes could be raised and employment stimulated.[12] Sandalwood was interspersed thinly throughout the forest area. Initially collection was based around the York district but as settlement spread quantities were found south of the Williams River and north and west of Kojonup, and in lesser quantities along the fringes of the Upper Blackwood River. To procure sandalwood the cutters forged their own routes through the forest to cart their loads to the coast in horse or bullock drawn wagons. These tracks often became established routes and later roads and railways.[13]

In an attempt to find economic activities other than farming the Colonial government offered bounties for any discovery of minerals. Small quantities of copper, lead ore, and tin were found in the Darling Range by about 1845 but not in quantities that were viable. Similarly, coal was discovered along the Murray River, several claims

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10 'A load consisted of 50 cubic feet or 600 super feet or 600 feet measured according to a stacked shipping ton', J. Mills, *The Timber People; a history of Bunnings Limited,* Perth, 1986, p. 7

11 I. Elliot, *op. cit.,* p. 100.

12 P. Statham, 'Swan River Colony 1829-1859' in C.T. Stannage (ed.) *A New History of Western Australia,* UWA Press, 1981, pp. 207-8.

13 For the history of sandalwood in this period see A. Schorer, *The Horses Came First; a history of the Wandering District,* Shire of Wandering, 1974, pp. 23-4 and *a History of the Upper Blackwood,* Blackwood Shire, 1968, pp. 86-9.

were pegged and the 'W.A. Mining Company' launched in 1846, but again, the claims were not considered commercially viable.[14]

At the end of this period, some areas of the forest region had been explored and were being used by pastoralists to graze stock, and by small holders to grow crops. The forest's resources were being harvested by sandalwood collectors and timber hewers and small quantities of timber were being exported. Some regulations to control these activities had also been put in place including a system of licenses for timber cutters and sandalwood collectors, but the development of a timber industry awaited investment and new technology.

14 Municipal Inventory of the Peel Region, Peel Development Commission, June 1994. p. 31.

1870 - 1889

Developing Local and Regional Economies.

In 1870 Western Australia was granted Representative Government. The colony now had some say over the future direction of its development. However, the end of convict transportation in 1868 brought a reduction in growth at the same time as prices for export commodities declined as the result of an economic slump. The need to increase trade saw timber being reassessed for its potential as an export earner. From its beginnings as merely an income supplement, sandalwood became a major export commodity in this period. The industry employed large numbers of cutters and carters, as well as merchants to organize collection and storage. The industry also created investment in other activities like the building of colonial schooners to ship the wood to overseas markets. The sales of sandalwood peaked in 1882 but the rate of cutting had been so concentrated that in some areas it was completely cut out. The industry was able to continue only because it was found that the roots of the tree also contained oil and areas that had been cut over could be revisited and the roots of trees pulled from the ground. But even this resource was limited and in an attempt at preservation a moratorium was placed on its collection in certain areas at the end of the century.[15]

An impediment to increasing the size of the export trade in hardwood timber continued to be the cost of transportation and the scale of timber operations. Large orders could not be filled under the existing methods of production. Expansion was only possible with the introduction of new technology in the form of steam power but this required capital that was not easy to raise in the colony. Wealth created by the Victorian gold boom was available for investment, but to attract venture capital some security of tenure was needed. This came in the form of new land regulations in the 1870s which granted timber concessions for a period of 14 years for an annual rental.[16] Three companies with access to outside capital applied and were granted concessions at this time. The Rockingham Jarrah Company with a 250,000 acre concession in the hills at Jarrahdale was established with capital from Ballarat in Victoria. The Mason and Bird Timber Company with a 100,000 acre concession in the Darling

15 The area bounded on the west by the Great Southern Railway, north to Beverley, by eastern railway to Clackline Junction, the Newcastle railway to New Norcia.'Annual Report of the 'Woods and Forests Department', 1899.

16 J. Mills, *The Timber People; A History of Bunnings Ltd.*, Bunnings Ltd., 1986, p. 7.

Range at Canning was formed by Benjamin Mason in partnership with the London backed Frances Bird and the third, a company with a 200,000 acre concession at Lockeville (outside the area of this study)..[17]

The expansion of railway networks throughout the world at this time created a great demand for timber sleepers and each of these companies was intent on entering this export market. They invested in new technology in the form of steam mills and locomotives, and to overcome the problem of transporting the timber from mill to port, built wooden railed tramway systems. From Jarrahdale the Rockingham Jarrah Company's tramway extended 23.5 miles (37.5km) across the coastal plain to Rockingham. The Mason and Bird Timber Company tramway extended 9 miles (14.5km) from their Mill in the Range to a port on the Canning River.[18]

These companies which pioneered the introduction of new technology in the milling industry did manage to export considerable tonnages of timber during the 1870s. However, the cost of production remained high. The need to build and maintain their own transport system and port facilities added to their costs. The scale of their operations still limited their ability to fill large orders even when they combined their efforts. These problems, together with a fall in the price of timber, eventually led to their demise and in the 1880s both companies were taken over by new syndicates with access to larger capital.[19]

Smaller mills not linked to venture capital also began operations in the Range near to the inland routes to the Avon Valley. Many of these were operated by families, who built small mills and cut timber under concession or special timber license. Among these was the York Greenmount Saw Mill more commonly known as Smith's Mill. Constructed in 1877 by Alfred Smith at Nyaania Creek, this was the first mill in the Mundaring district. Other small mills were scattered throughout the Range supplying the immediate vicinity with its timber requirements or producing small loads for the larger mills.[20] Some, lacking the capital to invest in the latest steam engines, used alternative forms of power. In 1878 there were three water powered mills in operation. One of these was owned by a family in Roleystone. The Buckingham family was typical of many who combined a number of small scale economic activities, some farming, some contract haulage for the large timber companies, and timber felling on

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17 J. Mills, *The Timber People, op.cit.*, p. 7. For a history of the Jarrahdale Timber Company in this period see V.G. Fall, *The Sea and the Forest; A History of Rockingham,*UWA Press, 1972, and *The Mills of Jarrahdale: A Century of Achievement 1872-1972,* the author, 1972. For Mason and Bird timber company see F.G. Garden, *Along the Canning; A History of the City of Canning Western Australia,* Shire of Canning, 2nd. ed., 1991.

18 J. Mills, *The Jarrah Forest, op.cit.*,p. 239.

19 J. Mills, *ibid.*, pp. 241-3.

20 I. Elliot, *op.cit.*, pp. 36-38.

their own land. They had experimented with water power in the 1860s and later went on to develop a further water mill in the 1880s at Poplar.[21] The Buckingham family was also typical of many whose involvement in the timber industry spanned several generations. They, like others in the Darling Range, moved south to open mills in new areas at a later date.[22]

Not all timber activity was based around the Darling Range. On the lower south west coast a pit-sawing operation was established on a concession in the Augusta area during the 1870s. Once again the problem of transporting timber to the coast affected the viability of this mill. Bullock drawn jinkers were used to haul the timber into the ocean onto waiting vessels and despite the implementation of several improvements this operation could not be sustained profitably and was sold in 1878. The concession was bought by a South Australian railway contractor, Maurice Coleman Davies, who came to the west with capital to invest in the timber industry. Davies established his enterprises in the Karri country of the Leeuwin Peninsular where he acquired additional timber concessions and constructed mills at Coodardup,[23] Karridale and Boranup. Davies was typical of the new arrivals entering the industry at this time. Backed by capital resources and possessing considerable entrepreneurial skill Davies was able to establish new markets for the previously neglected Karri timber. He overcame the problem of transporting timber by building a series of wooden tramlines linking his mills to a winter port at Flinders Bay and a summer port at Hamelin Bay. At each port long jetties were built where timber was loaded from the jetty directly onto waiting vessels.[24] Remnants of the jetty and tramway embankments can still be seen today at Hamelin Bay.

The problem of the colony's inadequate transport system was finally addressed in the 1880s. In this decade construction of the first government railway linking Fremantle to the Avon District was undertaken. The line reached York in 1885 and Beverley two years later.

Construction of this new railway gave a considerable boost to the economy by creating a demand for sleepers and construction timber for bridges and platforms. The new rail projects also attracted firms from the eastern colonies with capital and expertise in railway construction. These companies competed for the lucrative railway

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21 A commemorative cairn erected in 1919 marks the site of this mill on the Brookton Highway . See D. Popham, *First Stage South; a history of the Armadale-Kelmscott District, Western Australia,* Town of Armadale, 1980, p. 55.

22 The Buckinghams established a mill near Collie and over time the site of the mill became the township of Buckingham.

23 Coodardup is the original spelling of this place name, currently the townsite, gazetted in 1957, is called Kudardup.

24 For details of the M.C. Davies enterprises see M. Calder, *Big Timber Country,* Rigby, 1980, pp. 58-69 and M.H.R. Southcombe, *Steam in The Forest,* Hesperian Press, pp. 68-81.

contracts and several, recognizing the potential of the local timber industry, either bought mills with current concessions or sought their own concessions and erected new mills on sites adjacent to the route of the railways. Among these were Edward Keane and James Wright of Wright & Company, contractors for the second section of the Eastern Railway. They took up timber leases and built a mill at what was to become the township of Mt. Helena. Later Keane acquired the Canning Lease of the former Mason & Bird Company and built a mill to produce sleepers for the Midland railway. The new players in the industry possessed, or had access to, engineering skills which allowed them to apply innovative solutions to the problems of transporting timber in areas away from the existing railway, an example being the construction of a very steeply graded rail line (known as the Zig-Zag line) from the mill at Kalamunda to Midland Junction.[25] Engineering skills were also needed for new public works projects like the construction of a dam in the Darling Range. The first was Victoria Reservoir on Munday Brook, built in 1891, which had a capacity of 240 million gallons. Water was piped from this reservoir to a storage facility on Mt. Eliza above Perth.[26] As will be seen later in this report, catchment areas for dams played a part in forest history in Western Australia.

A railway linking the ports of Albany and Fremantle was considered essential in the 1880s but infrastructure projects of this size required large scale capital. Loans had already been raised on the London market to build the Eastern Railway, so when the government was approached by private enterprise offering to build the line in exchange for proportional land grants, the offer was accepted. The Western Australian Land Company, formed in London, contracted 'to construct, equip, maintain and work a line of railway fromYork to Albany, to be known as the Great Southern Railway.'[27] The contract to build the line was awarded to the Melbourne contracting company of C. & E. Millar, a name which was to become a dominant force in the timber industry.[28] In conjunction with their railway construction work C. & E. Millar entered the timber industry and were granted a timber lease on 26,000 acres of freehold land in the Torbay-Elleker area near Albany. Later they acquired 50,000 acres around the Nornalup Inlet. At these sites Millars built several mills constructing their own system of railways to link them to the port of Albany.[29]

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25 J. Mills, *The Jarrah Forest, op.cit.*, pp. 244-246.
26 *Ibid.*, p. 255.
27 For the history of the construction of the Great Southern Railway see M. Bignell, *A Place to Meet: A History of the Shire of Katanning,* Shire of Katanning, 1981.
28 P. Statham, *et al., The Southern Forest Region of Western Australia: a history study for the Australian Heritage Commission.* Centre for Western Australian History, University of Western Australia, September 1993, p. 31.
29 *Ibid.*, pp. 27-28.

Building settlements and towns.

In contrast to the former methods of processing timber the new steam mills required a large, permanent workforce located near to the site of the timber operations. As a result, small settlements developed around various mills. These varied in size and in the type of accommodation provided. Single men's quarters tended to be basic. Some lived in tents, others in hessian houses. These structures were quite portable and could be easily erected at camps in the forest when cutters were felling timber away from the mill site. Married workers and their families were usually housed in more permanent structures built of timber, but at times, families too joined their menfolk in the forest. This became possible at mills where timber rail lines were built out into the forest. Workers, their families and all their belongings, including their dismantled houses, would be placed on the timber train and taken long distances into the forest where homes would be re-erected and a new small settlement begun.

The design of towns, the style, size and siting of the workers homes, and those of the mill manager or owner reflected the hierarchy of the mill's labour force. The mill manager's home, generally a substantial building, was usually located in a high position away from the workers homes.[30] Mill towns also contained a number of buildings to accommodate the various activities associated with timber cutting and saw milling. The large numbers of bullocks and horses used in the industry meant that holding yards and stables were needed to accommodate the animals. Blacksmith and wheelwright shops were required to maintain or manufacture machinery and their activities were carried out in an assortment of buildings scattered around the mill site. Although the worker housing improved over time, and the size of settlements fluctuated according to the size of the workforce, this pattern of mill settlement, a small township clustered around the mill was to be repeated in many locations throughout the forest over the next 80 years.[31]

Not all timber workers were associated with settlements. Timber cutters with hewers licences were scattered throughout the forest. While many in the timber industry adopted new technologies and improved milling techniques these individual hand sawyers continued to use the old methods. Trees were felled by axe then manoeuvred onto wooden bearers above an excavated pit. Once in position two men using a 2 metre saw would

30 At Karridale M.C. Davies built a 39 room brick residence complete with ballroom and grand piano. Referred to as the 'Big House' this building was the social centre for gatherings of the local and visiting elites, Mary Calder, *op.cit.*, pp. 61-3.

31 For life in timber towns see M. Calder, *op.cit.*, passim, H.D. Evans, 'Pioneering in the Karri Country', and M.H.R. Southcombe, *op.cit.*, passim.

cut the timber into the required lengths. They built their saw-pits near the source of good timber and established basic camps. Initially their accommodation consisted of tents or more permanent shelters known as 'V' huts. A basic timber frame in the shape of an upturned V covered with bundles of blackboy spines, reeds or paperbark.[32] Every enquiry into the industry commented on the waste created by this form of timber processing, but hewers' licenses continued to be granted and at times special areas were set aside for their exclusive use. In 1883, 1920 acres north of Chidlow's Well was designated for the use of timber cutters and a further 9,000 acres was declared at Sawyers Valley in 1888.[33]

Governing: forest policy

The timber industry expanded under the impetus of outside capital during these two decades, but the period was also marked by the emergence of conflict between competing interests in the forests. The first glimmerings of a concern for conservation can be detected in the 1870s. At this time concerns were raised that the future viability of the forest was being overridden in the pursuit of economic gain and that the needs of future generations were being neglected. The 1875 Land Act which introduced new regulations for the timber industry and granted long term licences created concern in some quarters about the large-scale exploitation of the forest. Although members of the colonial bureaucracy seemed to think the forests were an infinite resource, a number of queries from the British Colonial Office eventually led to the appointment of a Royal Commission in 1877. The Commission was to report on the steps which might be taken by government to regulate and encourage the export of timber and to conserve the forest of the colony. No report was made but the following year a Select Committee of the Legislative Council looked into land regulations. Their recommendations included imposing additional fees for hewing licences in order to discourage waste; the branding of logs; and the appointment of forest rangers to oversee this practice. Two years later, the highly regarded botanist, Baron Ferdinand von Mueller, toured the colony and produced a report *The Forest Resources of Western Australia.* In his report Von Mueller related the size of the forest regions to 'an area equal to the whole territory of Great Britain' and noted the extent of 'the species *Eucalyptus* (the yarrah) [sic].... which for the durability of its timber is unsurpassed by any kind of tree in any portion of the globe.'[34] Von Mueller cautioned against uncontrolled use of the forest resource pointing out that

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32 For details of saw pit operations in the Mundaring area see I. Elliot, *op.cit.,* pp. 99-108. (Sawpits were in use into the twentieth century).

33 Later a township was declared in this area. Its name, Sawyer's Valley reflects the occupation of these early timber hewers.

34 J. Mills, The Jarrah Forest, op.cit., p. 243.

'nowhere not even in the most extensive woodlands, can the supply of timber from natural forests be considered inexhaustible' and that provision should be made to maintain this 'forest treasure'.[35]

A further report by the Surveyor General, Malcolm Fraser, also identified the need for some control over saw milling and for provision to be made for State Forests. Concern was expressed about the waste of timber in the local industry, and a recommendation made that a board be established to regulate the size of trees to be cut and to protect the forest from the effects of fire. Concerns about the rate of cutting in the forest appear to have been discounted by Fraser who commented that the untouched forest area was so enormous that 'no anxiety need be felt as to the exhaustion of supplies for many years.'[36]

35 J. Mills, The Timber People, op.cit., p. 7.
36 J. Mills, The Jarrah Forest, op.cit., p. 243.

1890 - 1918

Developing Local and Regional Economies.

In 1890 Western Australia was granted self government and in the same decade significant amounts of gold were discovered at Coolgardie and Kalgoorlie. The discovery of gold had a major impact. It brought great wealth to the state, quadrupled the population, attracted investment capital and created the need for increased public works and major infrastructure developments. These included the extension of the railway system, the redevelopment of Fremantle harbour, and the upgrading of other coastal ports and the construction of the Goldfields Water Supply. These major works greatly improved transport facilities and created a demand for construction timber. A domestic building boom also boosted the market for local timber as did the requirements of the mining industry. At the same time demand on the world market increased export opportunities. To meet the demand, local production had to expand and once again capital was needed to fuel this growth.

Overseas interest in Western Australia during the gold boom resulted in many mining companies being floated on the London Stock Exchange. Several local timber companies took advantage of this new source of funds and listed their companies on the London market. They included Millars' Karri and Jarrah Co. Ltd. (C. & E. Millar), M.C. Davies Karri and Jarrah Co. Ltd. (M.C. Davies), and the Gill McDowell Jarrah Co. (F.D.D. Good, A. Forrest and J. McDowell).[37] These companies invested in new equipment, took out new concessions and acquired or built large new mills. The increased capacity of the mills boosted the total volume of timber produced so that by 1899 the total output of 181,000 loads more than doubled the figure of the previous year.[38] The great increase in volume was, however, too much for the market to absorb and prices fell.

Growth and expansion of the colony's economy in this period led to increased competition between conflicting agricultural, forestry and mining interests and those concerned about the future of the forest. From the 1890s onwards, government policy actively encouraged people onto the land in a bid to offer new settlers a stake in the colony and to increase food production, especially wheat and dairy products. In the south west a number of different schemes aimed at opening up new land and encouraging settlement were initiated and a number of

37 J. Mills, The Timber People, op.cit., p. 33.
38 Annual Report, Woods and Forests Department, 1899.

inducements were offered to prospective farmers. The Homestead Act of 1893 offered a free homestead block of 160 acres with the option to buy more under conditional purchase.[39] To encourage settlement, ringbarking of designated areas of the forest was undertaken, to open land for orchards and dairying, much to the consternation of those who viewed this practice as a waste of a valuable resource.

At times, agriculture and forestry did coexist without conflict. In the Darling Range near Perth, orchardists tended to follow the saw millers, taking up land in areas that had already been 'cut over'. In the Harvey district, soil types clearly defined the farming and forest country because the best jarrah grew on lateritic ironstone boulder country unsuited for cultivation.[40] It was in the far south west where agricultural settlements in forest country aroused concerns on all sides. To the saw millers the opening of more land to agriculture was seen as a threat to their current timber concessions and their hopes for obtaining new ones. Farmers, on the other hand, feared that strong timber interests could dictate the future use of land and prevent clearing. Both sides feared those who advocated reserving large areas of land for future generations by proclaiming them government reserves. Those desiring the establishment of reserves included members of the Western Australian Natural History Society who were motivated by a desire to preserve areas of native flora and fauna for enjoyment of nature-lovers and future scientific study. In 1894 this group was successful in having an area of 65,000 hectares of unexplored jarrah forest in the Darling escarpment south east of Pinjarra declared a Flora and Fauna Reserve (Reserve 2461). A Parks and Reserves Act was passed in the following year listing fourteen different types of reserve, including an 'A' classification which could only be changed by an Act of Parliament. However, legislative protection was not sought for Reserve 2461 and sleeper cutters and later millers were soon demanding access to the prime jarrah on this site. Reserves were also declared in the area around a series of limestone caves under the karri forest in the Leeuwin-Naturaliste region. These spectacular caves attracted large numbers of visitors from an early date and the reserves were declared to protect this tourist attraction. Like the Pinjarra Flora and Fauna Reserve this area too came under pressure, this time from farmers wanting to lease land around the caves to graze their stock. The intervention of a Caves Board established to protect the area succeeding in defending the area from intrusion until 1914 when the caves were placed under the control of the Lands and Surveys Department.[41]

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39 The Homestead Act No 18, 1893.

40 A.C. Staples, *op.cit.*, p. 317.

41 For discussion of the establishment of Flora and Fauna and Cave Reserves in this period see B. Moore, 'Tourists, Scientists and Wilderness Enthusiasts: Early Conservationists of the South West' in B.K. de Garis (ed.) *Portraits of the South West: Aborigines, Women and the Environment,* University of Western Australia Press, 1993. pp. 110-135.

By the turn of the century a slump in timber profits which followed a boom year in 1899 led to another reassessment of the industry. Transport and labour costs had increased and it was recognized that reorganization and rationalization were necessary. This occurred in 1902 when eight of the principal producers, the Millars' Karri and Jarrah Forest Company, Jarrahdale Jarrah Forests and Railway Company, M.C. Davies Karri and Jarrah Company, Gill McDowell Jarrah Company, Imperial Jarrah Wood Corporation, Jarrah Wood and Sawmill Company, Canning Jarrah Timber Company, and Jarrah Timber and Wood Paving Corporation, combined to form the Millars' Karri and Jarrah Company (1902) Pty. Ltd., or as they were commonly labelled, the 'Combine'. The formation of the combine marked a major change in the timber industry. The scale of its operations and its increased bargaining power gave it strength in negotiating with government for new timber concessions on favourable long term leases. Its size and control over production also allowed it to dictate terms and prices on both the domestic and export market.[42]

The acquisition of large timber concessions, access to international finance, and modern machinery also enabled the Combine to streamline its production. In this process some of the combine's mills were abandoned, others amalgamated and new mills established. Aside from large mills at Collie, new mills were constructed in the Harvey River-Mornington Brook region. In this area transport problems were overcome by building an elaborate railway to haul timber to their mills which were powered by the state's largest steam engines. This machinery and the Combine's railway stock was maintained and repaired at a large complex built for the purpose at Yarloop.[43]

The major restructuring of the industry had a significant impact on smaller mills. Some closed, others were taken over by the bigger companies and some relocated to other areas. Those that remained were forced to re-equip and implement new milling techniques to remain competitive. Changes under the Land Amendment Bill of 1904, which abolished the leasehold principle in favour of a system of royalties, disadvantaged some of the smaller concerns. But the release of further areas of land to timber millers opened the way for two major local timber merchants and domestic retailers to enter the industry.[44] These local companies acquired mills, which they re-equipped and adapted to new milling techniques and entered into competition with the Combine for both local

42 J. Mills, The Timber People, op.cit., p. 33.
43 For the history of development in this area see A.C. Staples, op.cit., pp. 320-327.
44 The firms of Bunning Bros. and Whittaker Bros. both became major players in the timber industry, Bunning Bros. eventually taking over the Millars Timber & Trading Co. in 1983 just one year before that firm celebrated its 100 years in the industry. Jenny Mills, *The Timber People, op.cit.*, p. 255.

and overseas markets.[45] Other small scale millers were able to make a profitable living by supplying railway sleepers for the railway extension to the eastern goldfields. Some helped the large companies to fill their orders and some took out firewood collectors' licenses. In the Darling Range, mills at Chidlow, Parkerville, Helena Valley, Glen Forrest, Wooroloo and Mundaring all did reasonably well with small steam mills in the booming 1890s.[46] However, by the turn of the century areas in the Darling Range were being 'cut out' and saw millers turned their attentions further south in search of new sources of timber at Collie, Harvey, Kirup, and Donnybrook.[47] The extension of the railway system in the 1890s and the consequent need for sleepers, provided an added impetus to seek new concessions in these areas.

A new rail line from Perth to Bunbury via Pinjarra was constructed in 1893 and over the next decade a network of lines extended out from the main system linking a number of previously isolated settlements in the south west. This opened up new areas for farming and new settlers came to establish small properties and orchards knowing that they could freight their produce to metropolitan markets by rail. The railway also provided a means of transporting timber to the ports of Fremantle, Bunbury and Albany.[48] To take advantage of the government rail system many miles of private rail were laid linking mill sites to the system. These were in addition to the timber lines which were built out from the mill into the forest as the timber around the mill was cut out. These lines enabled milling operations to be conducted over a large area for a considerable time.[49]

In the 1890s two major capital works projects were undertaken, the construction of a harbour at Fremantle and a Goldfields Water Supply Scheme both of which were conceived and implemented by the colony's Chief Engineer, Charles Yelverton O'Connor.[50] Both these projects were to have an impact on the prosperity of Western Australia with significant consequences for the timber industry. At Fremantle prior to this date loading facilities were provided at a long sea jetty suitable only for vessels of 12 feet draught. Larger vessels had to lie in the Roads and discharge their cargoes into lighters.[51] Many of the large steam ships of the day bypassed the port in favour of

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45 J. Mills, The Jarrah Forest, op.cit., p. 268.
46 For the history of mills in this area see I. Elliot, op.cit.
47 For history of mills in this area see A.C. Frost, Green Gold: A History of Donnybrook W.A. 1842-1974, Donnybrook/Balingup Shire, 1976.
48 For pioneering farming in the Warren District during this period see A.G. Prince, Esther Mary; My Pioneer Mother, Fremantle Arts Centre Press, 1981.
49 C. Berry, op.cit., p. 40.
50 For details of these projects see J.H.S. Le Page, Building a State: The Story of the Public Works Department of W.A., 1829-1985, Water Authority of W.A., 1986.
51 J. K. Ewers, *The Western Gateway; A History of Fremantle*, 2nd. ed., Fremantle City Council, 1971. p. 94.

Albany. The construction of a deep water harbour at the mouth of the Swan River increased both the volume and tonnage of ships which could enter the harbour easing the problems of exporting bulky items like timber. The construction of the Goldfields Water Supply Scheme included the building of a large reservoir in a rocky gorge on the Helena River in the Darling Range. From this source, water was to be piped 525 kilometres to Coolgardie in the eastern goldfields along a route which roughly followed the railway from Northam to Coolgardie. Construction of the Scheme commenced in 1898 and while it provided employment for many and kept timber mills busy supplying timber sleepers for the pipeline, it also resulted in the destruction of between 20,000 and 30,000 acres of jarrah forest which was ringbarked to clear the valley for the weir. This waste of large quantities of timber was heavily criticized and used as an argument for better control and management of the forest.[52]

In 1911, a Labor Government came to power in Western Australia. This government was committed to a policy of state involvement in economic enterprises through state owned ventures. In line with this policy the state entered the timber industry in an attempt to provide competition to offset the Combine's monopoly and control over prices. State mills were built at Dwellingup and Banksiadale to supply sleepers for the Western Australian Government Railways (WAGR) and in 1912, on the strength of a contract to supply the Commonwealth government with 1,400,000 sleepers for the Transcontinental Railway, new mills were constructed in the Warren District. The first, State Sawmill Number l was built about 6 km to the west of Manjimup. Known as Deanmill, after Alfred Dean the first and long time manager of the mill, it was opened in 1912. Later, State Mill Numbers 2 and 3 were located nearer the big timber, further south at Big Brook, the site of the future town of Pemberton.[53]

After a period of relative buoyancy, the timber industry declined during the period of the First World War. The shortage of shipping to transport timber and a decline in export markets, together with the loss of skilled labour to enlistment, and high prices for stock feed for the haulage teams, all contributed to the decline. Many mills closed down, others were kept operational by a greatly reduced work force. By 1916, only 23 of the state's 35 mills were working. One of the few gains for the timber industry during the war was the increased use of local hardwoods in the domestic market. This came about partly as a result of the difficulties in obtaining imported soft woods but also from the closure of opportunities to sell hardwoods overseas. New machinery was introduced to allow hardwoods to be adapted for use in housing construction. Timber window frames and some flooring, previously

52 I. Elliot, *op.cit.*, p. 136, and J. Mills, *The Jarrah Forest, op.cit.*, pp. 258, 267.

53 Australian Heritage Commission (AHC) & Department of Conservation and Land Management (CALM), 'National Estate Values in the Southern Forest region of Western Australia', Draft Report, Commonwealth of Australia, 1992, p. 38.

made of imported pine, were replaced with local timber. Similarly, tramcars and railway carriages for the Western Australian Government Railway were made from local rather than imported timber. Having adapted to the use of hardwood in construction, the local market continued to use these products in the post war period.[54]

Throughout this period mining was another commercial activity in the forest region contributing to the state's economy. The major gold discoveries of the 1890s were all located in the dry eastern regions of the state. Small amounts of gold had been found in the Darling Range since pioneering days, but always in quantities too small to be developed. A discovery at North Dandalup in the late 1890s did spark some interest and attracted prospectors but these small 'workings' did not amount to a major find and interest soon waned.[55] Some gold was also found at Donnybrook and a deposit of graphite near the Donnelly River was mined at the beginning of the century. This was only possible after the construction of a bridge over the Donnelly River made transporting the ore from the mine feasible. This unique bridge, aptly named One Tree Bridge, was constructed by felling a large Karri tree across the river and placing an eight foot decking along its length. Some graphite was exported but it was found to be of an inferior quality and the mine ceased operations around 1907.[56] Mining on a larger scale occurred in Greenbushes where tin had been discovered in 1888. A tin smelter began operations in 1900 attracting a large population to the area. Several mills in the vicinity supplied timber for the smelters. Deposits of coal had also been discovered at several locations throughout the south west but the major deposit at Collie was the only one to be developed on a large scale. Due to its high moisture content Collie coal was considered inferior to the bituminous coals imported from New South Wales. However, its potential for use in steam locomotives led to the development of several mines in the 1890s. Assistance to the industry was provided by the construction of a spur line linking Collie to the South West Railway but two Royal Commissions into the Coal Industry revealed that it could only survive if subsidised and amalgamation were undertaken to rationalise the industry. A number of mills were located in the Collie area and the continuation of mining resulted in large areas of jarrah forest, identified in the 1890s as some of the best in the state, being cut to fire the industry's boilers and steam engines.[57]

54 J. Mills, The Jarrah Forest, op.cit., p. 273 and The Timber People, op.cit., p. 57.
55 For details of these minor finds see J. Mills, The Jarrah Forest, op.cit., pp. 261-2
56 AHC & CALM, op.cit., p. 36.
57 J. Mills, The Jarrah Forest, op.cit., pp. 263-4.

Building settlements and towns.

In this period the growth of the railway system led to the development of new rural settlements at places where trains stopped for water or coal, to deliver goods or pick up freight. When located close to a mining, agricultural, or timber cutting area these small sidings often grew into sizable townships. People came to live in the new towns and establish businesses boosting the local population, others came from the surrounding areas to visit and take advantages of the services offered. Towns at the terminus of railways usually developed quickly. Manjimup in the heart of the timber country and the terminus for the railway in 1911 was a typical railway town. It had a store, a blacksmith's shop, a tailor's shop, a school, a hotel and a workers' hall which doubled as a place of worship. It also had a barber, a butcher, a postmaster, a policeman and a branch of the National Bank.[58]

Given the poor roads in Western Australia and the great distances to be covered, colonial investment in an extensive rail network brought significant change in the countryside. The rural population reaped the benefits of a cheap and convenient way of getting produce to markets and the provision of some conveniences and services. The linking of townships by rail also broke the terrible isolation of the countryside. It allowed people to come together and socialize, to compete in sporting activities or partake of various other community activities.[59]

The emergence of the Combine and the restructuring of the industry led to the development of new forms of mill towns. Mornington near Harvey was one such example. A private mill town, it was located in a relatively isolated area removed from the main railway. Surrounding the largest mill in the state, the town was built to accommodate a population of 1,000. It was well planned. Workers' houses were laid out in streets and water was delivered from a dam through reticulation. There were company boarding houses for single men, a company store, a company butcher and bakery and access to medical facilities. But there was no hotel. Mornington was built on the company's privately owned land, and the company chose to have a 'dry' town. While this well planned company town provided for all its workers' needs, it suffered from the usual problems associated with company towns. Many found the company ownership of all aspects of the town stifling and resenting the restrictions placed

58 C. Berry, *op.cit.*, p. 37-38.
59 C. Berry, *op.cit.*, p. 40.

on them and founds ways to circumvent the company rules. Sly-grog shops located just outside the company's boundaries offered one opportunity.[60]

Mill settlements in isolated areas developed a strong sense of community and workers often felt great loyalty to the mill where they worked. The name of the mill contributed to each settlement's sense of identity. At times mills adopted the owner's name or in the case of Deanmill the name of a popular mill manager. At other mills the area or type of timber country was reflected in the name, for example, Jarrahdale and Karridale. In other instances the name came from a significant piece of mill equipment. The Waterous Mill was so called because this mill was powered by a large steam engine built by the Waterous Company, an English engineering firm, and the Lion Mill was named after the Company's trade mark, a rampant Lion which was often painted on the roof of their local warehouses.

In isolated areas, residents of mill towns had to devise their own recreation and entertainment. In the early days mill workers would often return to the forest on their day off to hunt kangaroos for sport or to supplement food supplies. The capture of wild brumbies to train for races between rival mill towns was another form of recreation. Later, as travelling became easier over long distances, organized sporting events like cricket matches, and after 1897, log chopping competitions were popular. A major event in most mill towns was the Saturday night dance which was held in local halls throughout the southwest. People travelled many miles to attend these events.

The life of some mills extended over several decades, and their populations became well established. Other mills had a short span. When a mill closed and there was no other form of economic activity in the area, the town was abandoned and lonely graves were left to mark the site where so many had lived and worked in the past. On other occasions the mill was relocated to another site and in the case of Denmark River, the town was sold to the government to develop farming properties and encourage migration to the area.[61]

60 For the history of Mornington see A.C. Staples, *op.cit.*,pp. 321-323. For life in the township see A. Atkinson, 'Mornington Mills', Murdoch University monograph, 1979.

61 AHC & CALM, *op.cit.*, p. 31

Workers

The increasing strength of the union movement and the passage of Arbitration Acts at the beginning of the century provided timber workers with the opportunities and incentives to organise. A timber workers' union was formed and attempts made to establish better pay and conditions for these workers. In 1907, The Amalgamated Sawmill Employees' Union of Workers lodged a claim for an eight shillings a day wage and a 48 hour week. These claims met strong resistance from their employers who had organized themselves into an association of employers to confront the union's demands. The refusal by the employers to accede to the union's claims resulted in a strike which lasted seventeen weeks before the workers capitulated and returned to work.[62] The *Westralian Worker* newspaper under the editorship of John Curtin was the voice of the union during this period. Through this paper these and other workers agitated for better wages and conditions which were eventually achieved in 1914, when the union was awarded a 48 hour week and a nine shillings a day minimum wage rate.[63] Some timber workers formed different types of organizations. In 1902, a group of timber hewers based at Noggerup, providing for a market which preferred the hand hewn to the mill product, formed the South West Timber Hewers' Association (later Co-operative) The co-operative formed a company and successfully contracted to supply paving blocks to the London market. Later the co-operative built a mill at Dwellingup which it sold to the State in 1921.[64]

Governing: Forest Policy

Concern about the rate of timber cutting in the forest had been voiced over several decades but with the introduction of self-government more calls were made to appoint a Conservator of Forests and to introduce legislation to conserve and protect this valuable resource. The first step in this process occurred in April 1895 when James Ednie-Brown. F.L.S., F.R.H.S., late Conservator of Forests, South Australia and Director General of Forests in New South Wales, was commissioned to report on Western Australian forests and their management. Ednie-Brown travelled throughout the forest region examining all aspects of the industry and his findings were set out in a report prepared for the government.[65] At the same time as the report was published, the government established a Department of Forests under the Department of Lands and Surveys with the Commissioner of Crown Lands as its ministerial head. Ednie-Brown was appointed the first Conservator of Forests. In this capacity

62 J. Mills, The Timber People, op.cit., p. 45.
63 J. Mills, The Jarrah Forest, op.cit., p. 274.
64 M.R.H. Southcombe, op.cit., p. 89.
65 J. Ednie-Brown, A Report On the Forests of Western Australia, Description, Utilization and Proposed Future Management, Government Print, 1896.

he presented the first Annual Progress Report of the 'Woods and Forests Department for the financial year of 1896/7.' Explaining the change of the title of his department he stated that it was considered more comprehensive and appropriate

> in view of the intention to plant largely the softwoods of commerce, the word "Woods" is generally applied to that branch of the profession which treats ..... plantations of trees, which have been formed by man; and "Forests" to that of the formation, maintenance, and management of .....arborous growth by nature, such as our magnificent forests of Jarrah and other timbers.

The necessity to create softwood plantations was explained by Ednie-Brown in his report where he noted that each year large sums of money left the state through the importation of softwoods. Between 1895 and 1896 the timber import figures increased threefold. Plantations of softwoods would not only be a financial saving, it would also make the state independent of fluctuations in outside supplies. No time was lost in implementing Ednie-Brown's plantation policy. Details of an early pine plantation in Bunbury were given alongside reports on experimental sandalwood farms at Pingelly and Meckering.

In stressing the importance of the timber trade Ednie-Brown pointed out that some 7,000 persons were connected to the industry. This figure was made up of workers and their dependents, employed in the colony's 41 mills. The majority of these mills were driven by small horsepower engines the exceptions being four large scale operators whose engine capacity was in excess of 100 horsepower.[66]

Ednie-Brown's recommendation that a specific Forest Act to deal exclusively with forest administration and conservation was an 'imperative necessary, no one, I am sure, will deny' was not followed. Instead a new Land Act was introduced in 1898 which did little to aid conservation or management of the forest. It extended timber lease terms of 20 to 25 years and the maximum areas held by one lessee increased from 50,000 to 75,000 acres.[67] The recommendation that the principle of rent for leases being charged per square mile be abandoned in favour of a royalty system which charged for each log in the mill was also ignored.[68]

In 1899 James Ednie-Brown died at the age of fifty-one. Responsibility for running the small department he had established was given to Charles Gough Richardson, a senior clerk in the Lands Department. Ednie-Brown's great enthusiasm and interest in woods and forests were not shared by Richardson. Annual Reports from this date do

66 Annual Report 'Woods and Forests, Department for the financial year 1896/7, *Votes and Proceedings*, Vol. 1, pp. 7-19.
67 J. Mills, *The Jarrah Forest, op.cit.*, p..266.
68 *Ibid.*, p. 268.

little more than record the progress of the various plantations managed by the department. However, interest and concern about the industry did continue through other channels. During 1903-4, a Royal Commission was convened to 'look into the Western Australian Timber Industry'. The interim Report of this Commission delivered in August 1903, made a number of recommendations including the establishment of a Western Australian Forests Department under the administration of an inspector general and directed by a board of three people with a knowledge of local conditions. A further finding of the Commission was that

> the forests of karri, jarrah and tuart should be preserved from alienation by the state and that the system of leasing forest land for timber cutting should be abolished and that timber should be disposed of on the royalty principal to be based on the measurement of the log in the round.[69]

The Commission's findings were adopted in part, in the Land Act Amendment Bill of 24 December 1904. In addition to licences for leases, a system of permits was introduced. This allowed timber to be cut in certain areas for a period of ten years. Quantity was based on the horsepower of the proposed sawmill, and royalty payments were to be made on logs at the mill.[70]

In its second session the Royal Commission enquired into the supplies of timber in competition with those in Western Australia on the international market, and the competition from hardwoods of the eastern states. It was to make recommendations as to 'the advisability and otherwise of establishing State forests under statute and enquire into regulations for the protection of the forests and into methods of cutting, carrying and distributing.'[71] It was found that the area of cut-over jarrah forest was 530,000 acres and of karri 150,000 acres and that the consumption of jarrah was at a rate of 60,000 acres per annum. The Commission also found that it would be a wise policy to discourage any increase in the rate of timber cutting because

> the State's acquiescence in the destruction of good timber only because of the export trade demands is a crime against coming generations and any attempts to increase the export in the interest of foreign companies or with the object of including more men to join in timber getting at the expense of posterity need wise resistance.

A further finding reflected concern about the lack of an administrative body to oversee the management of the forest, suggesting that the industry 'had been permitted to grow to its present dimensions uncontrolled by effective administration' and that adequate provision for conserving the forest would not be possible until an Inspector

69 Royal Commission 1903-1904 pp. 100-103 quoted in J. Mills, *The Jarrah Forest, op.cit.*, p. 268.
70 J. Mills, *The Timber People, op.cit.*, p. 36.
71 *Ibid.*, p. 37.

General 'qualified by experience and scientific training and aided by a board' was reinstated, a finding that went unheeded for a further two years.[72]

Responsibility for Woods and Forests was transferred to the Mines Department in 1914. Two years later, Charles Edward Lane-Poole was appointed Inspector General of Forests in the Woods and Forests Branch of the Mines Department. Lane-Poole who had trained at L'Ecole Nationale des Eaux et Forêts at Nancy in France was a dedicated forester and a man of vision. He immediately set about familiarising himself with the state's forest regions. He visited the south west to inspect the jarrah and marri country and the 'beautiful karri country' which he described as 'a sight for the Gods'. He also implemented an enquiry into the sandalwood industry sending representatives to Hong Kong and Singapore to enquire into the markets in those countries. Following his survey of the forest regions and after making contact with various interests in the timber industry, Lane-Poole began preparing a Forest Act to be presented to Parliament.

With the appointment of Lane Poole the direction of public forest policy changed. No longer was it received wisdom that the forests were infinite, no longer would forests be exploited in the same way as mines. Lane Poole left the State two great achievements. He formed a government department to administer his lucidly written Forests Act, a document which was not substantially amended until the department was amalgamated with two others in the 1980s, and he raised public awareness of the unique nature of Western Australia's forest heritage. The remainder of this Report is largely devoted to exploring his legacy in a historical context.

72 Royal Commission 1903-1904 quoted in J. Mills, *The Jarrah Forest, op.cit.*, p. 268.

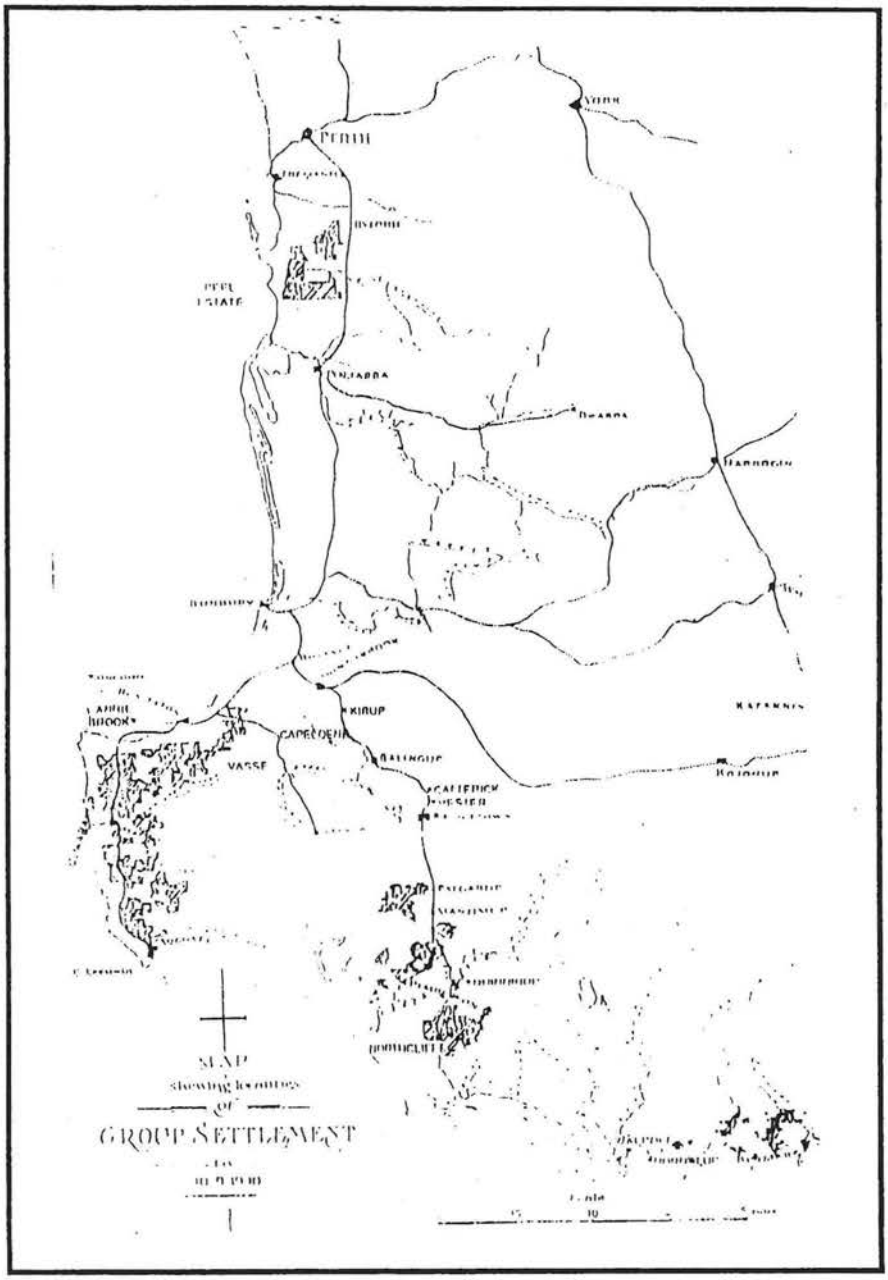
1919-1939

In choosing this span of years as a period of natural historic significance the influence of world history as well as local events upon Western Australia is clear. The years between the end of the First World War and the beginning of the Second World War included a world-wide depression and the consequent development of a number of social and political strategies for over-coming a series of adverse circumstances. These strategies or policies affected the south-west forests in a variety of ways as they did most other avenues of endeavour. During these two decades significant developments of departmental expertise in forestry became apparent. The Forests Department was established at the beginning of the period and by its end had control of large swathes of native forests as well as many acres of pine plantations.

Peopling the forest : immigration policies

1919 was a very important year in Western Australia. In common with the rest of the country and with other ex-combatants of the First World War, Western Australians experienced a period of social unrest which included some violent incidents. Returning soldiers expected recognition of their sacrifices and some reward. They had fought for an ideal - a 'strong man's country', and demanded their rights, yet unemployment appeared to be widespread.[73] Riots in Kalgoorlie, against the use of immigrant labour in the mines, and at Fremantle, against the docking of a ship suspected of carrying the dreaded Spanish influenza, were but two of the better known incidents. The government, nervous about organised labour, was also influenced by the war. Debate about population levels then, as now, was abrasively expressed with a newly elected government led by Premier James Mitchell deciding to support an immigration scheme which would settle more people upon the land. In New South Wales, closer settlement became part of the Millions movement, in Western Australia, the aim was more modest. Mitchell wanted six thousand new farms. Returned soldiers were encouraged to take up land. The

[73] See cover picture of *Aussie* 15 June 1920, a journal put out by returned soldiers in New South Wales which shows a young man on his own farm. The caption is 'From No Man's Land to strong man's land'.



wheat-belt was expanded, railway lines were driven into the agricultural areas and land which once had been thought too remote or too difficult to clear was set aside for an experiment in group settlement.[74]

The group settlement story has been told elsewhere, but the efforts made to place poorly trained and equipped families in the south-west forests has left traces which today stand as testiment to one of the more tragic ideas of an ill-informed State government. Group settlers were sent south of Perth first to the sand-plain areas near Mandurah, and later to the forested country as far as Denmark and beyond. In each place there were many failures of will, strength and crops and some few successes. Trees were ringbarked and left to fall. Foresters were outraged and Annual Report after Annual Report endeavoured to make the departmental point of view clear.

74 See J.P. Gabbedy, *Group Settlement. Part 1. Its origins: politics and administration*, UWA Press, 1988 for a fuller explanation of land settlement policies at this time. Map also from this source.

Governing the forest

For 1919 was significant in Western Australia for another reason. Lane-Poole's Forests Act was promulgated. The Act which established the Forests Department and gave the Conservator of Forests exclusive control over all matters of forest policy, also set out terms under which the department was eventually to become free of Treasury control. Three-fifths of monies earned from royalties on timber cut by sawmillers was to go directly into an account which would 'form a fund for the improvement and re-forestation of State forests and the development of forestry, and such funds may be expended by the Conservator with the approval of the Minister without any other authority than this Act.'[75] The Act also provided for education of the public with the declaration of an annual Arbor Day. Lane-Poole, who in pursuit of his ideal of educating the public was to write part of the primary school syllabus about forests, did not remain long enough with the Department to see the full benefits of his Act. He fell out with the Premier over land settlement at the same time as he was endeavouring to change the basis of licencing saw-milling in the State. He left Western Australia in 1921.

Members of the small Forests Department learned a good deal during the Lane-Poole years for he was an enthusiastic exponent of the wealth and glories of Western Australian native timbers. The first State forest to be proclaimed under the Act was the tuart forest near Busselton.[76] Lane-Poole recognised this forest as unique - not only in Western Australia but the world. He wanted it protected, but he also knew that research into the tuart was required. Another feature of the Forests Act was a requirement that professional officers possess professional qualifications. When the Act was proclaimed there was not one professionally trained forester in the State apart from himself. He instituted a training school for apprentices at Ludlow, near the tuart forest, and although the school was not to last until 1930, those who trained there were to become exemplars of modern forestry practice. The departmental interest in education and research continued in other forms and at other places throughout these years.

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75 Section 41 (2) The Forests Act, No. 8 1919, known as the Forests Act 1918.

76 It was gazetted 27 June 1919. See Judith Johnston, 'The history of the tuart forest' in B.K. de Garis (ed.) *Portraits of the South-West: Aborigines, women and the environment*, 1993, pp.138-153. Lime kilns,rail tracks and saw pits survive in this forest as do arum lilies which thrive in the foreign environment.

Educating the world about WA timbers

In 1920 Lane-Poole represented Australia at the first Empire Forestry Conference in London. There he advised delegates that Western Australian timbers were far too beautiful to be used only for railway sleepers, telegraph poles or for paving streets.[77] The following year he wrote for Western Australians 'Nowhere in the world except in Australia are railways sleepers made of the country's finest timbers', and he urged more refined use of jarrah for cabinet making and in the construction business. Western Australia, he commented bitterly, had an 'unreasoning adherence to British traditions' and as a consequence had forbidden the use of timber as a building material for fear of fire.[78] Lane-Poole realised that in order to conserve the state's timber the reputation of that resource had to be substantially altered both at home and overseas. Most of the wood cut by saw-millers was exported either to the eastern states or Great Britain. The cultural values he attempted to ascribe to the forests were both practical and poetic, and they were to be shared by many (although not by Premier Mitchell nor by the saw-milling companies).[79]

Protecting the forest

In 1922, the year after Lane-Poole quit his position, a Royal Commission of Inquiry into the Forests Act was called. It is perhaps a measure of his success as an advocate for the State's forests that the departmental position was upheld by the Commissioners who found among other things that the system of leases and concessions which had not yet been brought under that Act were 'not in the best interests of the State' and that 'all future methods of exploiting the forests should be on the permit basis.'[80] Jarrah was said to be a 'rapidly diminishing quantity' and blame for this state of affairs could be squarely laid at the feet of Millars' Timber and Trading Company which held concessions over vast tracts of jarrah country. The karri forests were also to be protected, as karri was 'unsurpassed' as a structural timber.

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77 C.E. Lane-Poole, Statement prepared for the British Empire Forestry Conference, London 1920.

78 C.E. Lane-Poole, Notes on the Forests and Forest products and industries of Western Australia, 2nd and enlarged ed., Perth, 1921. Bulletin No. 2 of the Forests Dept. pp.193-4.

79 In the 1920s the State government became interested in tourism and endorsed special rail trips to the south-west forests for eminent visitors.

80 Report of the Royal Commission on Forestry 1922. Commissioners were all Members of Parliament, William George Pickering (chairman), Henry Willoughby Mann and Peter Laurence O'Loghlen. Their support confirmed the fears expressed by Lane-Poole and sounded the knell for Millars' Timber and Trading Company's special treatment.

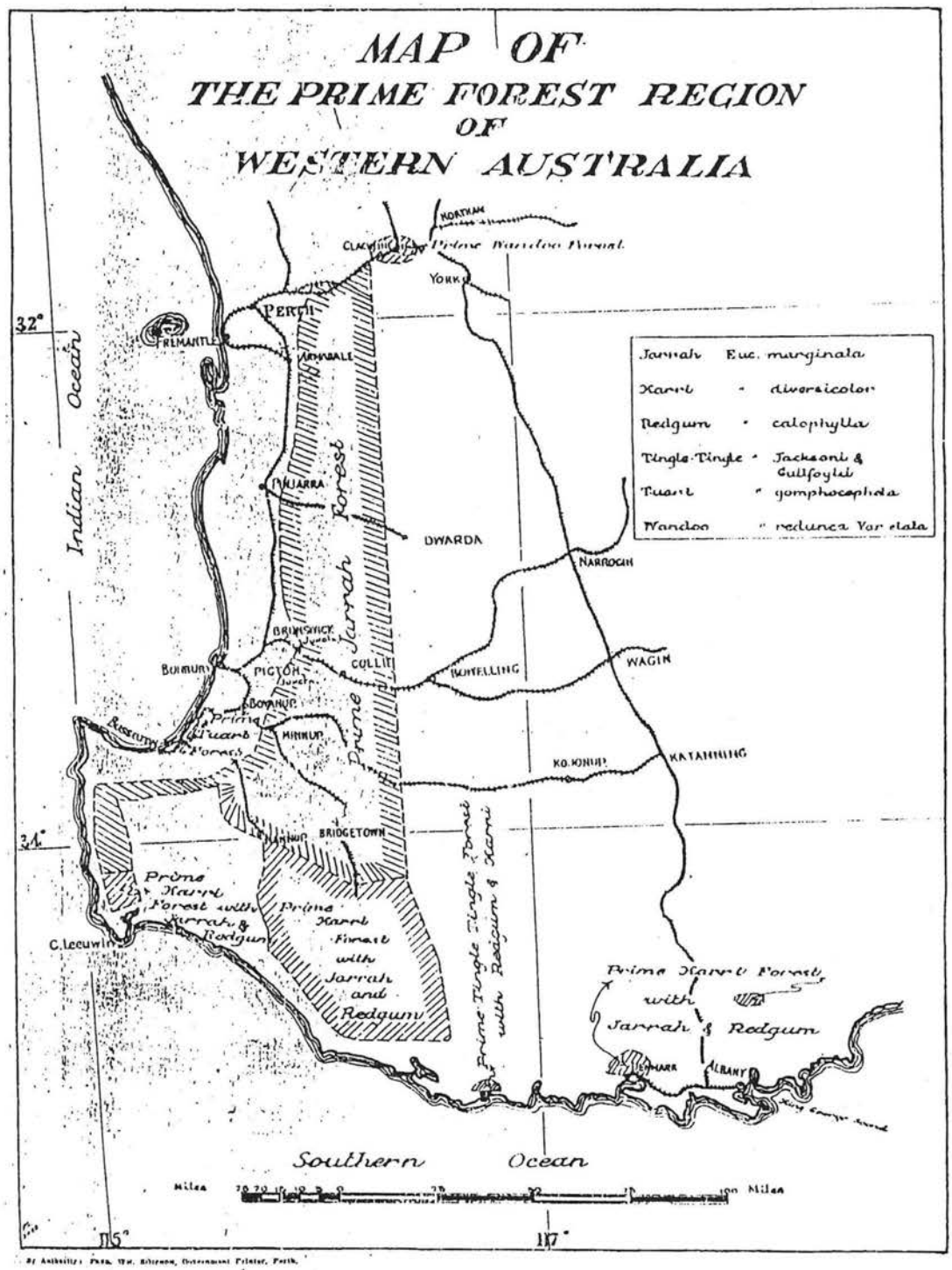
Thus it was not unexpected that in the Annual Report issued at the end of June 1922 the department expressed its requirement that reasons be given each time an area was cleared for group settlement. A strict monetarist argument, that would be recognisable to many of today's economists, was put.

> The only sound basis for deciding whether a settler is a better asset than the standing timber is a comparison of the gross wealth which each is capable to yielding to the State. Unless it can be shown that the destruction of the timber will mean the establishment of a settler who will produce more gross wealth in the period likely to elapse before the timber can be cut than the export value of the timber at the end of that period, then the trees should be allowed to remain.

Farms in the forest

Despite losing Lane-Poole, and forgoing the appointment of a new Conservator of Forests for the next three years, the Forests Department was on a course which had been charted by the Act and which would eventually result in a systematic reappraisal of forested areas throughout the state, both publicly and privately owned. A detailed description of the prime jarrah forests had been completed in 1919 and a recommendation made that two million acres be set aside as State forest. This recommendation was not well received by Mitchell and was not acted upon despite the department's firm allegation that jarrah country was in general poorly suited for agriculture. Nonetheless Mitchell's new settlers were sent into the forests with an axe and saw as well as a tent and a cow and various farm implements to carve out living areas for themselves. In 1922, they were as far south as Denmark; in 1923 areas south of Nannup along the Blackwood River were reserved for them. Margaret River, Balingup and Donnybrook also received 'groupies'. The pressure of population policies upon the forests can be seen most readily on the accompanying map. The Forests Department fought to keep as much native forest under its control as possible and as the group settlement scheme staggered and failed in many of its locations during the 1920s State Forests were declared especially above the river valleys and in the hillier regions of the south-west.[81]

[81] P. Christensen, *The Blackwood: a valley in transition*, Perth, Forests Department, 1981 describes the changing occupations of settlers along the river and also the changing forest policies from 1895 until 1980.



British Empire Forestry Conference 1920
C.E. Lane-Poole Statement prepared for Perth government 1920

Forestry skills - Mundaring State Forest

But the forests which most Western Australians knew best in the 1920s were those nearer Perth. Mundaring was another State Forest (parts of Mundaring had been set aside for this purpose before 1910), and it is in the history of the management of Mundaring that another element becomes apparent in the history of forest management - that element is water. Mundaring Weir supplied water to the goldfields as well as to Perth. Constructed in 1902, it was a crucial part of C.Y. O'Connor's scheme to take water eastwards. The weir itself became a place of pilgrimage for Perth people, especially in winter months when water spilled over the wall. It is a significant site for many Western Australians. It is also important in the history of the Forests Department for it was in the Mundaring State Forest that ideas were trialled.

Many state forests today coincide with water catchment areas, reflecting a growing knowledge about the value of uncontaminated catchment as well as fears of salination which often mars over-cleared land in Western Australia. Rising salt had begun to appear around Mundaring Weir as a result of an early experiment in ringbarking much of the original forest. Efforts were made to restore jarrah growth and when those trees proved too slow or difficult to establish it was decided to re-forest with softwoods.[82]

The beginnings of plantation timber

Western Australia's native timbers are mostly hardwoods and, as already noted, in the nineteenth century some softwoods, mainly pines, had been planted in order to decrease the costs of imports. There was a dearth of softwoods in the country as a whole and the Commonwealth government encouraged their planting, eventually engineering a national agreement about plantation timber.[83] That was to come, but in 1920, 400 acres mostly around Mundaring were planted with pines, in 1929 there were 4000 acres and a further 1000 planned. The Gnangara State Forest, north of Wanneroo, where 2,500 acres were planted throughout the 1920s, stands on a water mound which now serves much of northern Perth. There, the thousands of *pinus pinaster* planted seventy years ago, are today ready to harvest. *Pinus pinaster*, which grows well on Perth's sand plains, contrasted with *pinus radiata* which grew well on better soils and was planted in the Mundaring area. *Pinus pinaster* were also planted

82 It was not yet fully understood how jarrah reproduced itself. The seeds germinated in ash beds, but it was later discovered that the forests were extended by new growth from root suckers.

83 See WA PRO Forests Dept. ACC934 ,1544, 'Co-operation between the Federal and State governments in the planting of softwoods', 1926. An agreement was signed between the Commonwealth and States in 1968.

near Perth at Collier Park and Applecross. Most of these trees have been felled, the few remaining providing shade around parklands and institutions and a memory of former forestry practice.[84]

Immediately after the First World War, the department increased research into softwoods, experimental plots were planted and thereafter measured at Hamel and Ludlow. In the Mundaring district there were three temporary nurseries, one at Greystones where 28,500 *pinus radiata* seedlings were planted on 32 acres of cleared hillside. One man (often an ex-soldier), could plant 220 trees a day. *Pinus pinaster* seed was sown, broadcast into furrows. There were also 3 five acre experimental plots at Donnybrook, one at Collie and one in the tuart country near Busselton.

In the late 1920s, prison labour was also briefly employed planting pines. A prison farm, the result of much debate about prison conditions for young offenders in Fremantle Gaol, was located at Pardelup. The farm was mostly used to encourage young men to learn agricultural rather than forestry skills and was to be regarded as an expensive failure, but a later experiment at Bartons Mill taught prisoners more about the forest plantations.[85]

Fire control

Such an investment in new plantations demanded a high degree of fire control. Sites in forests may be grown over, replanted, reconstructed, forgotten, sold and built upon but their greatest enemy is fire. Each year in its Annual Report the Forests Department noted the extent and number of forest fires which for many years were mostly caused by sparks from locomotives. Mundaring became the centre of fire control for forests as far south as Pinjarra. The Department, developing its first working plan in Mundaring under the Act, included provision for prevention of bush fire.[86] Returned soldiers were employed to clear a road around the reservoir. It is visible today only when the water level drops because the dam wall was raised in 1951 in order that more country towns be supplied. Fire breaks were cut and fire towers were constructed, the first on Mount Gungin and the next on Mount Dale. Twenty five miles of telephone line connected the two look-outs with the forest stations and with headquarters and fire breaks followed the telephone wires. The fire control scheme was said to extend over the Helena, Barton and Karragullen blocks - an area of 120,000 acres. Controlled burning of narrow strips of forest

84 Remnants of these plantations may be found around Curtin University, Collier Park golf club, and in some parks along the Leach Highway.

85 J.E. Thomas and A. Stewart *The History of Imprisonment in Western Australia* , UWA Press, 1978.

86 The Forests Act required the Conservator of Forests to draw up working plans which were to specify the extent of the forest, the amount of timber which could be extracted from it, the 'sylvicultural operations' necessary and 'such matters as the Conservator may think fit'. Sect.31.

was practised on calm days. Communication over such an area was maintained with the help of heliographs and morse code.[87] Despite these regulations and departmental efforts to reforest some areas with jarrah, sawmilling in native forests around Mundaring closed down in the 1920s.

Developing Regional Economies — the timber industry

During the First World War, most timber mills had closed down and in the immediate post-war years the timber industry was slow to re-establish itself. By mid 1922 there were eight sawmilling areas in the state listed by the Forests Department and in many of them the mills were described as 'working intermittently' or 'not working at present'. However, by the middle of the decade the number of sawmills had increased, more timber was being felled and changing technology, as men moved from depending on bullock teams and horses to using tram and railway lines, materially improved the speed of delivering the logs; the 44 hour week was won for timber workers and a rise in exports rewarded the mill-owners. The timber industry of this and the next decade was organised around large mills and spot mills. Timber tram-lines were laid in the forest so that large trunks could be removed to the mill. These tram-lines have left traces in some places which have been converted to tracks, roads or bush-walks. (In the Mundaring area some have been preserved in a heritage reserve.)[88] Spot mills, first used in the 1930s, were small and moveable. Often they employed as few as three men and were useful in areas where timber resources were limited or where access was difficult. They cut timber for railway sleepers.[89] The main areas of logging took place around Dwellingup (near Pinjarra), Collie (near the coal mines) Donnybrook (where orchards and dairies were being established) and Pemberton where the State Sawmills eventually worked four mills, a kiln and a research station.

Dwellingup

At Dwellingup the WA Government Railways had a timber concession and a big mill. Millars' Timber and Trading Co. and other smaller operators also logged the forest and a divisional office of the Forests Department was built in the town in 1929.[90] The timber from the jarrah forests in this area mainly was used for railway sleepers and fruit cases. Nearby, the first reserve set aside in Western Australia for wildflowers was incorporated

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87 WA Forests Department, Annual Report for year ended 30 June 1922 and J.L. Butts, 'Mundaring Division: a brief history', unpublished paper, n.d.

88 B. Callow, 'Mundaring Municipal Inventory, Draft Report, Historical overview by I. Elliot'.

89 See Forests Department, Annual Report, 1947, for chronological list of events, which states that portable mills were introduced in 1936.

90 Forests Department cottages were built at Mundaring, Bartons, Illawarra, Canning and Carinyah forests in the 1920s and a departmental settlement was established at Inglehope in 1928. J.L. Butts, 'Mundaring Division: a brief history', p.32 and Forests Department, *Annual Report*, 1947.

into State Forest by the Forests Department. Dwellingup was a big timber centre and today has a tourist development based upon the industry's history with marked walks into the remaining forest. The wildflowers still attract annual expeditions into the Hotham Valley.

Collie

In Collie, the only coal-mining area of the state, timber was required for mine props and Bunnings Brothers had two large mills, one on the Harris River from which site a tram-line to the Allanson mine was constructed.[91] Shortly after the First World War a departmental working plan was developed for the Collie State Forest wherein 212 acres were to be clearfelled and closed for regeneration. A further 100 acres were to be set aside for softwoods and eucalypts. All 35,000 acres of forest were to be protected with fire breaks. The Forests Department established an arboretum on the banks of the Collie River to test varieties for further planting. Just after the Second World War there were five major mills operating in the area. The State Forest near Collie protects another catchment area - around Wellington Dam, for salination was to prove a problem here too as a result of over-clearing on privately-owned land. This water reservoir was constructed during the Depression by men employed on sustenance relief and has since been enlarged. Today, Collie has a modern timber mill run by Bunnings and the town has encouraged recreation development in canoeing, bush-walking and cycling in the surrounding forests.[92]

Donnybrook

At Donnybrook the story was a little different. Before the end of the First World War three five acre experimental plots had been planted and by 1929 an arboretum was also established. Donnybrook, Balingup and Boyup Brook, although opened up by timber milling soon became centres for post-war settlement and dairy farming or orchards. Donnybrook, despite its name, had numbers of Italian settlers whose presence altered the social and cultural outlook of the town. Not enough work has been done in Western Australia on the influence of immigrant groups in country towns but it may be safely said that Italians brought with them certain skills in agriculture and aboriculture which identified their farms. Certainly during the Second World War the Italians of Donnybrook were so identifiable as a group that the local RSL demanded that all Italians in the state be interned.[93]

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91 See Jenny Mills, *The Timber People: a history of Bunnings Ltd.*, Perth, 1986 for a full description of these mills.

92 Forests Department Annual Report, 1922, 1929, *Municipal Inventory for the Shire of Collie*, prepared by Hocking Planning and Architecture, October 1995

93 See M. Bosworth, 'Internment' in J. Gregory (ed.) *Onthe Home Front: Western Australia and World War II*, UWA Press, 1996, pp.200-211. None of the secondary sources consulted during the course of this project has mentioned the specific influences of the Italians upon the landscape or the built environment. Nevertheless the probablility that certain sites do exist is high.

Further to the east and south along the Blackwood river the remaining timber lands in that long river valley were declared state forest in the 1920s. A big mill at East Kirup, later called Grimwade, closed in 1928 and workers there were soon planting pines for the State.[94] Mitchell's plan to settle the south-west also bore fruit around Pemberton, Nannup and Northcliffe. In those more isolated places the communities were largely dependent upon forest industries for employment. But apart from Pemberton, these settlements were very small in the interwar years.

Pemberton

Pemberton is surrounded by mixed karri and jarrah forest in what has become known as a tall tree area. Now a focus for tourism, Pemberton has always attracted visitors eager to see the forests and accompanying wildflowers. In the 1920s, group settlers found less happy experiences as they struggled to fell trees, establish farms and find markets for their produce. Eventually a train line was built connecting Pemberton to Manjimup and Northcliffe (but not to Albany), which improved their accessibility.[95] Pemberton's development as a timber town depended on understanding the various uses to which karri could be put beyond the making of fruit cases. Karri was not regarded as highly as jarrah for sleepers or roadblocks because it was less resistant to white ants. But it is such a long and strong timber that it was widely used in construction work when placed off the ground. Methods of protecting the timber from termite invasion were researched in the 1920s at Pemberton. One, which involved boiled molasses and arsenic impregnating the logs was apparently useful but was succeeded by a more sophisticated chemical preparation.[96] Pemberton also became the centre of a small agricultural area where hops and tobacco were grown, flax was tried and potatoes were successful. A town swimmming pool, big enough for state competitions, was carved from the river and a golf course, which added to the town's tourist attractions, was cleared under some of the trees. The department had long been aware of the need to protect the karri forests and nearby, on Lefroy Brook, De Courcey Lefroy's former farm at Yarkenup was bought in order to become a focus of research. Lane-Poole had estimated the new trees as regenerating in 1875 and later Conservators of Forests watched and measured them, thinning some acres in order to measure the difference in growth. This part of the karri forest now stands as testiment to early forestry practices.[97]

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94 P. Christensen et al *The Blackwood: a valley in transition*, Perth, Forests Department, 1981, p. 24.

95 For some memories of Pemberton see John Morris and Roger Underwood, *Tall trees and tall tales: stories of old Pemberton*, Perth, Hesperian Press, 1992. For a more historical survey see G. Eivers, 'Pemberton 1939-45' in B.K. de Garis *op.cit.* See also Pamela Statham et al, *The Southern Forest region of Western Australia: a history study for the Australian Heritage Commission*, Perth, 1993.

96 The State established a 'powellising' plant in Pemberton to treat karri.

97 See Forests Department, *Annual Report*, 1967 for full description of the plot.

Jarrahdale

Closer to Perth, the Jarrahdale Concession, long a bone of contention between the Forests Department and Millars' Timber and Trading Co. ended in 1929.[98] This year saw a lengthy departmental Annual Report which concluded that a balance between re-forestation and milling was achievable if more funds could be made available (a not unfamiliar story). The department had made giant strides during the 1920s in fire control and forest management. It had been decided that the ideal method of combatting fire, and of ensuring that trees were correctly blazed for felling, was to divide the bush into 500 acre (200ha) lots, marked out by 'scraper tracks made by a triangular implement of local design drawn by a single horse'. Survey posts and reference trees were inscribed at the corners of each block. Four permanent fire lookout towers had now been built and three important tracks which connected Jarrahdale to Dwellingup, Jarrahdale to Kirup and to the Ellis Creek mill site had been laid on 'old whim tracks and tramway formations'. More than 67 miles (107km) of new telephone lines had been strung in the forest between lookout posts. It was claimed that the fire tower on Mount Wells overlooked the whole forest between the Serpentine River and the Murray, but the fire situation would only be under full control when foresters lived in departmental housing on each block. Some houses were built, especially in the Mundaring forests. There were two in the tuart forest, and in later years more were constructed near Jarrahdale and Dwellingup as State Forest areas were measured into blocks. The Forests Department saw these homes as a chance also to display local timbers. After the Second World War a number of houses were made of marri, a hitherto despised timber for building, in an effort to persuade saw-millers that the timber was workable.[99]

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98 See V.G. Fall, *The Mills of Jarrahdale: a century of achievement 1872-1972*, Perth, [1972], 1979 for a map which shows the mills and the tramlines into the forests.

99 See Report of the Royal Commission appointed to inquire into and report upon Forestry and Timber matters in Western Australia, 1952, p.6. Unfortunately the location of these houses is not given.

Other industries

Firewood was cut near Perth for wood-fired stoves and boilers of all descriptions. In Sawyers Valley the Perth Firewood Company utilised WAGR rolling stock on their private railway line for this purpose, elsewhere, other groups supplied wood, especially for the state's mines.[100] During the Depression and the Second World War, firewood cutting was performed by the unemployed or those men under the control of the Manpower Board. Still today, there are designated places in the state's forests where members of the public can gather firewood.

The forests, which grow mainly on the hills and along the Range from Perth to the south coast, also hid other useful materials. In the inter-war years stone was quarried from Donnybrook and from Mundaring. Gravel pits were to be found near Mundaring and Jarrahdale, charcoal burning was practised near Mundaring, particularly during the Second World War when charcoal replaced petrol as a fuel in some forms of transport. Traces of these industries, especially the quarries, are still to be found.

Bee-keeping is another industry which utilises the forest. Karri has been declared one of the best pollen and honey producing plants in the world and commercial bee-keepers follow the honey flow in the southern forests. Bees do not flourish in arid areas and commerical beekeepers keep westwards of the most easterly forest margin as they follow the flowering wandoo. After the Second World War apiarists pushed to have all the wandoo forests reserved for their industry.[101]

The Depression of the 1930s saw many timber mills close down or slow production for a period of four or five years. Piles of timber awaited delivery at railway sidings, especially from Jarrahdale and Dwellingup. The forests department spent little on staff training but continued its research into propagation of native trees at its main nursery at Hamel. Bark of the wandoo and from mallet was harvested and sold for tannin extraction. Poorer farmers collected this bark and also gathered acacia gum for Plaistowes (a confectionery maker in Perth). Many pulled sandalwood, or sold piles found on their blocks, as a subsidiary source of income.

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[100] The labour force on the woodlines which supplied Kalgoorlie and Coolgardie was largely composed of immigrant men. Even after the Second World War migrants were still being sought for this purpose. See J. Murray, 'The Kalgoorlie woodline strikes 1919-1920: a study of conflict within the working class', in L. Layman (ed.) Bosses, Workers and Unemployed, Studies in Western Australian History V, UWA Press, 1982.

[101] Department of Agriculture, Bee Culture in Western Australia, Perth, n.d. Commercially farmed bees leave little behind them but their honey yet their presence in the karri forests indicate another form of cultural significance. See also Report of the Royal Commission appointed to inquire into...Forestry and Timber matters in Western Australia, 1952 for uses made of forests.

Sandalwood

The department continued to research sandalwood as the industry continued to grow. Western Australia has three species of sandalwood which grow sparsely and mainly on the eastern and northern drier edges of the jarrah forest. The tree is parasitic and efforts to replant and reforest with sandalwood were unavailing until tried near Kalgoorlie and in the Dryandra State Forest near Narrogin. By 1929 the Forests Department had exerted some control over the sandalwood trade inspecting exports in order to check the girth of the wood as limits had been placed on the size of trees which could be pulled. The department had early continued the policy begun by the Department of Lands and Surveys, of reserving small timbered plots in the wheat belt. At first it was thought that such plots would provide firewood as farm trees were destroyed. Later it was found that sandalwood also survived on some of these reserves. These trees are protected under the Sandalwood Act which is administered today by CALM (formerly by the Forests Department), the licence issuing authority.[102] Sites which recall the sandalwood trade include a yard at York where the timber was piled before being transported to Perth, and various tracks in the remnant forest areas north and east of the south-west forests. An arboretum in the Dryandra State Forest and one near Kalgoorlie also reflect the continuing status of sandalwood.

Governing the forest: Bushfire legislation

It was a constant complaint from the Forests Department that bushfires spread from private properties into State Forests. In 1937 the Bush Fires Act replaced two earlier Acts and gave control over the management of bush fires to local government authorities and to volunteer brigades.[103] The Forests Department had full authority in State Forests and on Crown Land and could be called in by private land-holders to extinguish fires on their properties. But fires were to be prohibited on bush country between 1 October and 30 April and penalties were to be enforced. Even the sale of wax matches was forbidden. It was hoped that a publicity campaign, waged by the Forests Department, would help reduce bush fire danger.

Community development

The people who lived in the saw-milling towns and in the small agricultural settlements along the rivers built their communities from forest timbers. There are many small community halls existing in the south-west, some

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102 Alison Oates, *The Story of Sandalwood*, Museum of the Goldfields, Kalgoorlie, 1989, and *Fifty Years of Forestry in Western Australia*, Perth, Forests Department, supplement to Annual Report, 1968/69 for illustrations and further description of the sandalwood trade.

103 Bush Fires Act, No. 55 of 1937.

falling into decay and others restored and still used. Small schools and churches also were mainly constructed of timber. Saleyards, sporting grounds and some roads were built as the result of community endeavour during the depressed conditions of the 1930s. Access to favoured coastal fishing spots was punched through the bush and at Windy Harbour a small settlement of cottages for recreational fishermen was built out of odds and ends.[104] In Pemberton trout were introduced to local streams and marron were protected.[105] The forests during this period were isolated from the world. Transport for people was limited to steam trains and rough roads, and timber was still carried by timber trains. Sawmills were big local employers but the work was hard and often dangerous. Living conditions were rough. The Forests Department provided work for numbers of the unemployed during the Depression and it was largely due to this labour force that softwoods were planted so extensively. Sustenance workers drained swamps and dug canals also. They lived in camps under canvas, and as a consequence their work remains the main testiment to their activity.[106] Dairying, the other main industry of the south-west was also very hard work. The effects of the Second World War were to force change in these occupations.

The Second World War: Defence

Military camps

The war disrupted all industries in Western Australia. Labour on farms and in forests became scarce as men enlisted. Although it took time for Western Australians to be convinced that this war could affect them, by 1942 they were quite aware of their vulnerability to attack from the Japanese. In many ways the war was as much of a watershed for Western Australia as the First World War had been, but this time some of the elements were different. One was the arrival of the American forces. The forests were indirectly affected by the military but it is claimed that a top-secret radar post was established in the Mundaring region.[107] Airstrips were built outside

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[104] For more descriptions of social and community action see J. Morris and R. Underwood, *Tall Trees and tall tales: stories of old Pemberton*, Perth 1992 and Stella Peden, *My love is a river*, Perth, 1992.

[105] Marron are fresh-water crayfish which were found only in the waters of the karri forests. They are now farmed extensively in the south-west.

[106] P. Statham, et al, *The Southern forest region of Western Australia, op.cit.*, p.54 for examples of work and living conditions; and G. Bolton, *A Fine Country to starve in*, 2nd. ed., UWA Press, 1994, for general discussion of the Depression in WA.

[107] A.J. Barker and L. Jackson, *Fleeting Attraction: a social history of American servicemen in Western Australia during the Second World War,* UWA Press, 1996, pp.94-5. The authors also claim that it is unlikely any remnants from this camp will have survived, especially as the Americans took everything except a septic tank away with them from places occupied in Perth.

Pinjarra on land bordered by forests, but none, as far as is known were constructed within the forests. Military camps were set up at Mundijong and again at Blackboy Hill in the Mundaring area.[108]

Labour difficulties

Forest work suffered from a diminishing labour force and the amount of timber cut was almost halved in the war years. It is perhaps not realised how much timber was required merely for firewood both for industry and for homes. Fuel stoves were still installed in new houses in the 1940s and fuel was gathered from the forests near Perth, but the biggest consumers were the mines at Kalgoorlie. From 1943 the labour force was reinforced with the Civil Alien Corps and with some Prisoners of War whose efforts kept Perth's home fires burning.[109] This is not the place to tell of the trials of people denoted 'aliens' and 'enemy aliens' except to record that many contributed to the war effort in the forests of Western Australia.[110] Their logging camps have long gone. In Harvey, bordered on one side by forest, an Internment Camp has been recorded by the efforts of a local group who have built a chapel on the site to mark their memories. At Marrinup, near Dwellingup, a Prisoner of War camp was established in 1942-3. Here some remnants of the buildings are still to be found in concrete footings and pathways.[111] In December 1945, after the end of hostilities, another Prisoner of War camp was established outside Northcliffe in the far south-west, for these men had to wait until shipping was available to return home. Many ex-prisoners of war held in Australia did not get back to Europe until 1947.

The war greatly affected exports and certain imports as shipping space was dedicated to war supplies. All primary producers were to fall under the control of various production boards and local agricultural war committees. Such an infrastructure was required because of the way the Commonwealth government directed the war effort.[112] Petrol was rationed by 1940. Spare parts for farm machines were hard to find and the availability of wire netting, barbed wire and fertilisers was suddenly limited. Farm technology was not very sophisticated in Western Australia, Milking machines, for example, were still rare in the war years, and the flight of men from dairy farms in particular meant that the dairy industry in the south-west would not recover from the wartime exodus. Exports

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108 For dates and places of military camps in WA see 'Appendix II, Wartime events and the Western Australian Homefront 1939-1949 in J. Gregory, *On the Homefront, op.cit*, pp. 298-304

109 Forests Department, *Annual Report* 1946, notes that total consumption of firewood for the year was estimated to be 665,000 tons, of which Perth required 210,000 tons and the goldfields 213,000 tons.

110 OH 2389, Battye Library Oral History Collection - Mr. G. Dattilo of Maylands whose experience as a Civil Alien Corps worker near Jarrahdale was not a happy one, and see M. Bosworth, 'Internment', *op.cit.*

111 An archaeological survey of the camp-site has been carried out. See also R. Richards, *Mandurah and Murray: a sequel history...* Murray Shire, 1990, for memories of this camp and its inhabitants.

112 For further examples of government regulations during the war and their effects upon primary producers see M. Bosworth, 'Eating for the nation', in J. Gregory (ed.) *On the Home Front in Western Australia, op.cit.*, pp. 226-238.

of fresh fruit were greatly cut during the war years and the apple orchards around Donnybrook were severely affected, as were the timber mills which had supplied fruit cases. On the other hand tobacco planting, flax and hops received a boost during this time as all these products were in high demand for the war effort. In peace-time there was an annual requirement for four million fruit cases which amounted to ten percent of all timber production, this level of production was difficult to achieve during the war and hard to maintain in the immediate post-war years.[113]

The story of flax illustrates the ties of Empire which were strengthened during the war years. Britain's peace-time supplies of flax came mainly from European countries which were unable to continue their trade in this commodity in wartime. Efforts were made to plant flax in the cooler parts of Australia which included areas around Harvey, Drakesbrook and Boyup Brook. The new crop was supported by government subsidy and was maintained until the 1960s when the subsidy was withdrawn.[114]

Other Forest Industries during the war

Owing to the severe shortages of petroleum products during the war the Forests Department instituted some research into charcoal production. Already some Italian farmers were supplementing their incomes by burning charcoal in the Mundaring forests.[115] In 1943 a charcoal producing plant was established at Wundowie that was to depend upon the surrounding forest for fuel and was to provide charcoal of a high enough quality to refine iron ore into pig iron.[116] It was to continue in production until 1981. Elsewhere, charcoal was produced from sawdust and zamia plants.[117]

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113 See Forests Department, *Annual Report*, 1946, for details of requirements in the post-war years. For a description of life in a small timber mill town during the war years, see A. E. Hartley, *War Clouds over Nannup: study of the life of a small Australian town 1939-1945*, [1987], the Shire.

114 See A. Schorer, *History of the Upper Blackwood*, pp.114-119 for a more detailed history.

115 B. Callow, 'Mundaring Municipal Inventory', *op.cit.*

116 N. Fernie, 'The Wundowie Charcoal Iron Wood Distillation project' *Journal of the Institution of Engineers Australia*, Vol. 21, 1949, pp.25-6 and J.L. Butts, 'Mundaring Division', *op.cit.*, pp 37-8.

117 Forests Department, *Annual Report*, 1960 - notes charcoal briquettes made during World War Two by crushing and heating the 'common blackboy' and mixing it with sawdust.

1945 - 1961

Post-war years

Changes in the Forest Industries

In 1938 the Forests Department had instituted a new method of describing and measuring the forest. It was intended to establish permanent assessment lines through sample plots some twenty chains apart and one chain wide. The trees within these narrow strips were to be regularly measured, but the war had intervened. Assessment work was immediately re-established in 1946 but along less labour intensive lines. The war had brought the use of aircraft to the notice of the department and in 1946 the first aerial photographs of state forests were taken. The forests and the timber industry was to be under greater scrutiny than aircraft could provide in the next ten years.

Major change also occurred within the private sector. Sawmillers had been affected by wartime conditions, and after the war technology began to change once more, requiring greater capital investment. Not only did steam engines disappear in the forests, petrol driven vehicles taking their place, with the resulting need for widened and improved roads, but electricity and running water became a requirement for new homes in timber towns as well as in the city. The Hawke Labor government in the 1950s continued to support state involvement in the timber industry, but in 1960 David Brand became Premier and his conservative government was much more inclined to seek efficient private timber providers. The numbers of sawmillers fell until eventually Bunnings Brothers emerged as the single giant. Millars' Timber Trading Co., once so dominant in the forests, was sold in the 1960s to a British company and eventually its assets ended up in Bunnings' hands.

Housing pressures

One of the most pressing problems facing Australian governments after the war was a lack of housing and it was here that it became most apparent how neglected the saw-milling infrastructure had been during the 1930s and the first half of the 1940s. Plans for 'Reconstruction' of the fabric of society were being laid before the end of the conflict. In 1944, the Commonwealth Housing Commission circulated State Premiers with the grim statistic that there was a conservative estimate of a short-fall in housing units of more than 250,000 which needed to be met. The Commonwealth Labor government accepted the view that such a dire lack of housing would be impossible to

overcome without Commonwealth assistance. Finance was to be offered the States and goals were to be set. The first was to build 50,000 new homes during the first year after the war. The target for Western Australia was set at 2,000 in 1946 rising to 3,000 the next year, but these targets proved difficult to fill.[118]

The need for new housing became more urgent when Displaced Persons began to arrive as the first of the new wave of post-war migration. Prefabricated homes were sought and it was discovered that at least two enterprising builders had been making and transporting timber homes into country areas for many years.[119] Mr Doran, who had a timber yard in a Perth suburb, Carlisle, had been providing two and four roomed cottages for soldier settlers since the 1930s as had Bunnings Brothers. At Mundijong another builder/sawmiller was also ready to tender.[120] Building materials of all kinds were in very short supply and it was found difficult to transport sufficient timber to the city by train because of the poor maintenance of the timber tracks during the war years, but it was almost impossible to find enough petrol to use trucks.

To overcome the timber shortage the Forests Department sold milling rights to large areas of the south-west forests and in the late 1940s and early 1950s new mills were established at Donnelly River, Northcliffe, Quinninup and Shannon. Bulldozers, chain saws and diesel trucks were to make these new establishments efficient. The timber they produced was, for the first time, largely sold on the local market.

Building settlements - Timber houses

Timber houses represent a particular form of cultural heritage in Western Australia. Since the Building Act 1884 had forbidden the use of timber as a building material, except under special dispensation from local government authorities, timber houses were generally regarded as undesirable or sub-standard. Yet the Act had not prevented widespread construction of timber framed houses in the bush. The timber mill towns in particular were usually formed throughout of native timbers, as were the Forests Department houses. This use of native timbers inside the house even as wall and ceiling linings was not usual in timber-framed city homes where window frames and doors, sometimes floors as well, were made of imported timbers and walls and ceilings were lined with plaster or asbestos

118 See the *Royal Commission of Inquiry into the State Housing Commission - Timber*, 1948. A meeting held in November 1946 between Housing, Forest and Sawmilling representatives set the target, sawmillers were less pleased as they had to provide a certain amount of timber for the home market before being permitted to export. There was a world-wide shortage of timber immediately after the war.

119 Prefabricated homes were not new in WA. Millars, which had timber yards in Perth and Fremantle, had advertised kit homes for new settlers before the First World War.

120 WA PRO, State Housing Commission, ACC962 6767/49 'Prefabricated timber cottages - Doran type for metro area'

sheets. The post-war demand for building materials forced the State Housing Commission (formerly the Workers Homes Board) to alter its requirements. Karri, newly acceptable as roof timbers, eased the timber shortage considerably in the short-term, but Premier McClarty, himself from Pinjarra near Dwellingup, accepted reality in 1950 when he wrote to the Prime Minister urging fuller use of imported materials.[121] Eventually Western Australia was to import 900 pre-fabricated timber homes from Austria.[122]

Houses in saw-milling towns

Timber houses in the saw-milling towns came under scrutiny in 1946 when a Royal Commission of Inquiry reported on the Timber Industry (Housing of Employees) Bill. The committee of parliamentarians visited and reported upon accommodation in almost every important saw-milling centre. Perhaps influenced by the strength of the Timber Workers Union, they were generally unimpressed by what they saw. They noted that the age of many houses, built 30 or 40 years previously, meant that they 'did not measure up to what can be reasonably expected as dwellings.' Roofs leaked, verandahs were narrow, windows were unglazed, ventilation was poor, walls unplastered and dark, and in some cases lined only with hessian and, most important of all, water supplies were inadequate. At Chadoora Mill, owned by Worsley Timber Co. where the houses had been built by the employees themselves, the conditions were described as 'deplorable'. Bush camps everywhere, where men lived for weeks at a time, were particularly poor, as were most single men's quarters. At Pemberton white ants were a real problem, but the houses there were generally larger. Only where the mill owners had built new homes, as at Bunnings' Nyamup Mill, or Millars' at Jarrahdale, were the houses regarded as 'a credit to the company'. These new homes had higher ceilings, kitchens lined with asbestos sheeting, water laid on and bathrooms. Some also were connected to the mill's electric power supply.

The Committee concluded that standards needed to be set, rooms had to be a particular size and ceilings no less than ten feet high. Ventilation, water supplies and electricity were essential. All floors were to be tongue-in-groove jarrah and rooms were to be lined with asbestos or plaster board as 'timber is not a suitable material for this purpose'. Verandahs were to be at least eight feet wide at the front and the back of the house.[123] As low rents were

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121 WA PRO, ibid., 253/46, 'Timber supplies - reports of special committee to investigate shortage'

122 For a fuller description of these homes and the debate around the use of timber in housing see M. Bosworth, 'Timber houses in Fremantle', Fremantle City Council, May 1996.

123 Report of Royal Commission of Inquiry into the Timber Industry (Housing of Employees) Bill. Commissioners were Herbert Henry Styants, Ernest Knight Hoar, William Henry Francis Willmott, Edward Joseph Frederick Holman and James Isaac Mann.

part of the working conditions for timber workers, these recommendations were resisted by some companies. However, as the timber industry continued to develop and indeed boom, the Timber Workers' Union brought action against the owners and succeeded in improving their accommodation as part of their pay and conditions.[124] The new timber towns were to accommodate many post-war migrants who had to serve two years labouring for the government under the terms of a variety of immigration agreements. Some remained in the forest areas adding visibly to the towns' cultural values in the form of gardens, recreation areas and social events.[125] In this way the production lag was overcome and in 1957, when war-time controls were finally lifted, the industry was thriving.[126]

New settlements

Soldier settlements were again seen as an answer to the problem of large numbers of mainly young and single men returning to the labour force. Land in the wheat belt was made available under a lottery scheme, lands in the south-west were also offered. Dairy farms near Northcliffe had been deserted but 200 small farms were set aside for returned soldiers in the Frankland River district. A new townsite for Rocky Gully was gazetted and houses built, 300 farms were planned for that area. The new settlers began enthusiastically to clear their land.

New technology

One of the less studied effects of the Second World War on the home front has been the influence of American technology. As part of the lend-lease scheme Australia had provided the American forces with most of their foods (up to 90%) and from America had imported improved food technology and food cultivation equipment.[127] American tractors and later, bulldozers, made their appearance in the forest areas too. This change in technology was to have serious consequences in increasing the rate of forest clearance especially as the chain saw came on the market in the immediate post-war years when waves of migrants came to the south-west. The Forests Department

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[124] Industrial Court Reports provide evidence of such action.

[125] Fonty's Pool, named after the Fontanini family, in the karri forest is just one such site; bocce courts, olive trees and grape arbours are other indications of immigrant presences.

[126] *50 years of forestry in Western Australia*, prepared by the Forests Department as a supplement to 1968/9 Annual Report, acknowledges the assistance of migrant labour. See also R. Underwood *Echoes from the forest*, Perth, 1990, for memories of immigrants.

[127] See M. Bosworth, 'Eating for the nation' and L. Edmond, 'A lesson in efficiency...transport and communications in the community' in J. Gregory (ed) *On The Home Front, op.cit.*

sought to control the clearing, which was continuing at such a pace that sawmills could not keep up with the supply, lamenting that much good timber was being burned as it fell in the paddocks.[128] Under an amendment to the Forests Act in 1954 the Conservator of Forests' powers were extended in order that timber on private property could be reserved to the Crown.[129] The same Act also increased the proportion of monies which flowed directly to the department from the royalties gained from the sale of timber to nine-tenths.

Success stories

1955 was a high point in the history of the Forests Department as its Annual Report made clear. Four million acres were now under its control as State Forest in an area which stretched 250 miles south from Perth. Its total area of pine plantation was 20,403 acres, about one third of them experimental plantings. In the south-west, in addition to the State Forests, a further 124,451 acres were reserved for timber under the Forests Act and another 200,000 acres were reserved for timber under the Lands Act. The Forests Department claimed to be second only to the Main Roads Department in the extent of its road network and the garages and workshops which it had established in its kingdom. 389 houses accommodated its employees in the forests and new look-out trees were identified and utilised each year. In 1955 the Beard, Boorara, Big Tree and Greenbushes Trees were manned as was Mt Frankland north of Walpole. These look-out posts were in addition to those trees already part of the fire detection web.[130] Fire prevention was still urgent. After decades of publicity and propaganda forest fire had become public issue. Trains now had spark arresters, but nothing could control the odd madman or woman who liked to light fires. In 1953 it had been calculated that fourteen percent of all fires were lit deliberately. An 'incendiarist' at Collie had been responsible for half the fires in that area.[131] It was decided that a return to controlled burning would ameliorate the situation. The department had to recall older foresters to teach the new officers old skills for controlled burns had been out of favour since 1942 when lack of labour had forced the abandonment of this practice.

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[128] The Royal Commission appointed to inquire into and report upon Forestry and Timber matters in Western Australia 1952, took the view that 'This destruction of Crown timber is a matter for concern and it is considered that the extension of settlement should be dependent upon the prior utilisation of timber' p.8

[129] Forests Act Amendment Act 1954 amended section 9 of the Forests Act 1918.

[130] The Gloucester Tree outside Pemberton had been glorified by the Duke of Gloucester whose action in driving the first spike into the tree ladder had been photographed and widely displayed in 1947. Diamond Tree lookout, six miles south of Manjimup had been first manned in 1942 and there were at least four trees so utilised in the Pemberton forest.

[131] Forests Department, *Annual Report*, 1953.

Fires

Terrible bushfires swept the forest in 1951 and again in 1955 when the newly re-built Jardee sawmill went up in flames once more. But nothing compared to the shock sustained by the forest and its keepers in 1961 when the Dwellingup fire destroyed Nanga Brook and severely damaged the town of Dwellingup. The fire raged through 350,000 acres of jarrah forest, although it was later claimed that a large part of that area received no serious damage. The Forests Department was inclined to put a brave face upon what seemed to be a disastrous situation.[132] However the effect of the Dwellingup fire was to cause a major re-think of fire patrol and fire prevention methods. The heat and electrical storms which had sparked the Dwellingup fire had also interfered with the radio communication network in the forests. From 1962 VHF installations at Dwellingup and Wanneroo and six repeater stations upgraded the system. Thirty two mobile units were equipped with radio. More recently, aircraft have been used for fire-spotting and for fire prevention.

[132] Forests Department, *Annual Report*, 1961, where it claimed at the end of its six page report on the fire that 'Jarrah is, however, a very fire resistant species, and most of the trees will recover, having suffered mainly a set back to growth. Surprisingly few trees of any value were killed by the fire.' See also R.J. Underwood and P.E. S. Christensen, *Forest Fire management in Western Australia*, Perth, Forests Department, 1981.

1961 to 1984
Turning points

Governing the forests

In some ways the year 1961 can be seen as a turning point for forest and land management. It was in that year that two large water reservoirs, the Serpentine Dam and Wellington Dam were completed (the latter, built during the Depression, had its weir wall raised) and both were eventually largely protected by forest and became centres of recreation.[133] But more significant for the future of the northern jarrah forests was the government decision to allow bauxite mining to take place at Jarrahdale and its granting of a mining lease over one million acres of jarrah forest.[134] The Forests Department had clearly lost an important battle. Yet the war was not over, at least not in the 1960s.

The two events, one illustrating a requirement for increased water resources - barely a creek was to remain in the south-west without a weir or a dam built across it, the other an emphasis on mining, were precursors of marked changes in the use of forests and subsequent traces of human activity. A third element was to become evident in 1965 when dieback was discovered to be afflicting the jarrah forests. Knowledge of the parasitical fungus which attacks the root system of the jarrah tree was slow to be uncovered but steps were taken to close affected parts of the forest to vehicle traffic in order to slow the spread of the disease. Ironically perhaps, it was only with the assistance of Alcoa, which, while mining the forest was also aware of an obligation to reforest, that research was completed into the disease.

The Forests Department continued to establish arboreta and to support research into karri and marri forests especially as volunteer groups of farmers and other interested persons began to take an interest.[135] However the departmental interest in softwoods had not waned, if anything it had become stronger. For many years the department had planted pines which had orginated in the Leiria forests of Portugal - said to be home of *pinus*

[133] It appeared that the Water Board had not yet learned its lesson about the likelihood of salination if land was fully cleared around major dams and salination did occur around the Wellington dam. See J.J. Havel, 'Land-use conflicts and the emergence of multiple land use', in B. Dell, et al., *The Jarrah Forest, op.cit.*, , pp.294-5.

[134] See the Alumina Refinery Agreement Act, No. 3, 1961.

[135] Four arboreta were established near Boxwood Hills and were maintained by farmers . Schools continued to plant trees and require departmental seedlings and professional advice. Forests Department *Annual Report*, 1967.

pinaster. Between 1963 and 1965 an officer was stationed in Portugal to assess the forests and to collect seed and scions of selected trees. A research station at Wanneroo was established especially for the nurture of these imported trees. The department had 25,000 acres under softwoods in 1967 but estimated that potentially 150,000 acres might be planted.[136] In 1968 a Commonwealth-State agreement fostered the idea of softwood plantings, but that year was also to see the first wood-chips exported from the State and the formation of a local voluble and active group whose concern for the future of native forests was to lead members into critical scrutiny of departmental policies.[137] Trade with new regional partners, as much as the domestic market requirements, helped institute a change in the trees that were planted and harvested. Bunnings increased its softwoods plantations and introduced the Tasmanian bluegum. The character of the forests has altered as a result. Slow-growing indigenous hardwoods are often replaced by other, faster-maturing, trees.

The 1960s was a tumultuous decade. In Western Australia the conservative State government endeavoured to develop and enrich the State both industrially and in the mining sector. It was the mining sector which mainly rewarded these efforts and until the 1968 Poseidon collapse, the West boomed. The State's population increased, and with new people came new ideas and new wealth. The ideas and wealth did not stop in 1968, nor did the population influx, although it may have slowed. The face of the capital city, Perth, was changed forever in the 1970s and 1980s as mining and insurance companies tore down old buildings replacing them with glassy high-rise tower blocks. Timber floors were out of place as concrete, bricks, tiles and marble slabs decorated the new structures. Indeed, timber as a building material, was once more relegated to the unfashionable or unfavoured. The value of timber exports began to fall and its importance to the State to diminish, especially when compared with the income derived from iron ore sales to Japan or the excitement promised by the resources of the north-west shelf.

Protests : Alternative Settlements

Not all the people who lived in the west during the 1960s and 1970s were mining magnates or geologists. There were some also affected by social changes expressed most vividly perhaps in the riots in Paris in spring 1968, but felt too in the streets of Sydney and Melbourne when young people streamed on to the streets to protest against Australia's involvement in the Vietnam War. In the 1970s demonstrations took place in Perth also. An alternative

[136] D.H. Perry and E.R. Hopkins, 'Importation of breeding material of *pinus pinaster* cut from Portugal', Forests Department Bulletin 75, 1967.

[137] The Campaign to Save Native Forests is the subject of a recent History Honours Thesis at UWA.

way of seeing the world was emerging. It was a view which encompassed some surprisingly conservative ideas including a desire to save the remaining native forests from mining and from wood-chipping. A few 'alternative' settlements began to appear in the south-west where the inhabitants struggled to develop small-scale local industries, often based on crafts like pottery or wood turning. The environment had become a political issue.[138] In response to public agitation a new Labor government set up the Environmental Protection Authority in 1971.[139]

Forest Debates

In 1970, the Forests Department, already recognising that new cultural values were being ascribed to its domain, showed an openness to alternative views. It was noted that, although the Dryandra State Forest was no now longer a commercial proposition because there was no market for mallet bark, nevertheless it was 'one of the largest and finest fauna reserves in the Great Southern region'. Moreover, the department recorded the fact that the public was taking a decided interest in abandoned forest settlements and was visiting some of them regularly for picnics or for bush walks. It singled out Gleneagle, only 53 miles from Perth on the Albany Highway and also Inglehope, 9 miles east of Dwellingup, Willow Springs a deserted sawmill town in karri country 11 miles east of Nannup and the Milward fire look-out tree in the Nannup district. Recognition that people might enjoy exploring the forest areas and that other values could be found in forests apart from commercial ones was significant for the department's later policies.[140]

In 1970, however, the Forests Department was still fighting for control of its realm. It was driven to recording in its Annual Report the opinion that mining 'has given rise to the greatest threat the forest has yet experienced', noting that half of the state's forest was 'subject to some form of mining tenement'. The department thoroughly opposed further mining in its territory. In this stance it was not alone. Another government agency was also threatened by depredations of mining companies. The National Parks Board had written in its Annual Report in the previous year 'This Board is opposed to the granting of mineral claims or miners' rights over national parks or reserves under its control and it will resist the granting of such where possible...It all seems so contrary to the concept of conservation. Western Australia is the only State in the Commonwealth where this system applies.'[141] And so a theme of conservation, which also meant preservation of the land and its flora and fauna, and is thus

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[138] The writer was a member of one such group in NSW where co-operatives bought small numbers of acres for mainly recreational purposes, but also to allow the bush to re-cover grazing land.
[139] R. Hughes (ed.) *Reflections on twenty years: Environmental Protection Authority*, Perth, the Authority, 1991.
[140] Forests Department, *Annual Report*, 1970.
[141] National Parks Board, *Annual Report*, 1969.

slightly different to the emphasis of the Forests Department upon sustainable development, enters the story of the south-west forests.

The National Parks Board, which functioned under the Lands and Surveys Department had been attempting to expand its empire throughout the post-war years. It had long been affected by the Forests Department policies as parks like the John Forrest National Park,[142] the Serpentine Falls National Park, Hamelin Bay, Nornalup, the Porongorups and the Stirling Range were in forest country and were bordered by State Forests or forest reserves. Without control of its own finances, the Board was reduced to writing plaintively in its Annual Reports about the values it ascribed to the work it did and the probable rewards of tourism.[143] The National Parks Board continued to observe Arbor Day with plantings within certain reserves and stressed the conservation of wildflowers and the need to re-classify A-reserves in order to preserve them. In 1969 the Sir James Mitchell National Park was declared in the Shannon basin - a saw-milling area bounded by State Forest which was the focus of a public campaign. 'Save the Shannon' stickers appeared on bumper bars in Perth and in 1971 the Shannon forest saw mill closed. However, as the records of the Environmental Protection Authority show, the Shannon issue was by no means simple. Without intervention of forestry experts in the Shannon area, karri regeneration was slow and other stands of previously untouched karri had to be cut in order to fill outstanding contracts. In 1976 the EPA produced its report, 'Focus on Forest Policy' which urged due attention to be paid to tourism and recreational facilities in the forests and which recognised an urgent need to protect native timbers. Conservation based on a reserve system became policy.

The three interests, Forestry, National Parks and Environmental Protection were eventually harnessed together in 1984 under the Conservation and Land Management Act.[144] The last Annual Report of the Forests Department noted, among other things, a policy of 'rehabilitating log landings, snig tracks and gravel pits' was continuing with the co-operation of the timber industry - thus removing much evidence of former occupation. Salination on agricultural lands was being attacked with 'agro-forestry', and the department had 68 arboreta growing and testing

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[142] The John Forrest National Park is in the Darling Ranges close to Perth, it was the first gazetted National Park in the state, dating to 1895. Bush, wildflowers and a swimming pool still attract many visitors.

[143] See National Parks Board *Annual Report*, 1962 where the Board complains that Treasury description of expenditure on National Parks could be categorised as 'social services' whereas the Board was sure that its reserves were 'now looked upon as a Tourist attraction with a definite value in the Tourist trade'...

[144] Conservation and Land Management Act, No. 126 of 1984. The Act covered State Forest, timber reserves, national parks, nature reserves, marine parks, marine nature reserves and 'any other land reserved under the Land Act 1933 and vested by order under that Act in the Commission or the Authority.'

suitable trees for each area. Planning was proceeding for the integration of the D'Entrecasteaux National Park with the Shannon River Basin and a Northern Region Recreation Framework Plan had been developed to provide places to visit and jobs for the unemployed in the northern jarrah forests.[145]

[145] See also National Parks Authority Report, *D'Entrecasteaux National Park - Outline Management Plan,* 1984, which describes the park, its environmental values and the Donnelly River settlement. The old townsites were preserved and an extensive network of tracks through the forest, partly the result of the Shannon mill operations, had been thrown open for tourists.

Conclusion

1984 to today

A politicisation of conservation policy which resulted from the 1960s urge to protect native forests and the environment has undoubtedly affected the south-west forests. But so also has government policy. Land settlement and immigration schemes opened up the forested areas of the south-west and added considerably to the public knowledge of those areas. Changing technology, improved communications, and the growth of small industries which added value to the timber by utilising it for furniture, toys or other small items, have altered life in the forests. Wood-chopping is now an arcane skill and sport which may be seen once a year at an agricultural show. Forestry science and saw-milling are now widely recognised as symbiotic - you can't have one without the other, for the forests are finite. Research continues into forest management and propagation of native trees and other eucalypts in order that soils and water resources may be protected and salination slowed. Research also continues into the treatment of sawn timber, half the jarrah cut now is dried in commercial kilns.[146]

Appreciation of the forests reflects pragmatic things like government investment in roads, itself evidence of an increasing desire to maximise the tourist trade and the tourist dollar as well as a response to the new and flourishing wine-making industry of the south-west.[147] Western Australians have discovered new interests in walking, camping and picnicking in places which once were far too remote from Perth or were activities far too close to everyday life to be indulged. These interests have been sparked by modern concerns for a healthy life-style as well as worry about the environment. Tracks like the Bibbulman Track which runs from Mundaring Weir to the south-west and shorter forest paths are well used. Sites which are currently valued reflect open-air activities. Recreation Management Plans written by CALM and by the Water Authority often endeavour to utilise old pathways and forest clearings.

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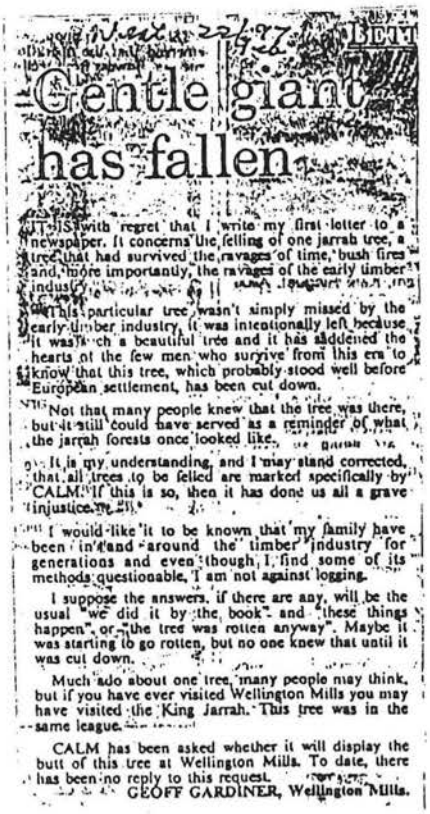
[146] The Forests Department had encouraged research into kiln drying from the 1920s when a kiln was erected in the grounds of UWA. Pemberton also had a kiln and a one was built at the departmental research station near Harvey in the 1980s. See Forests Department *Annual Report*, 1984 and CALM *Annual Report*, 1995-6.

[147] The history of the wine-making area of Margaret River has not been approached in this Report as it has entailed a large destruction of the forest. However it dates from the 1970s and has proved a highly successful industry.

Sites within the forest which reflect the changing patterns of use over the twentieth century are frequently grown over, built upon or burned out, but there has been an emergence of interest in old forestry houses and timber homes in deserted saw-mill towns. Ghosts of the past arouse passions still and investment in timber houses, especially around towns like Denmark, Nannup, Manjimup, Pemberton, Bridgetown and Northcliffe, has rescued many fragments of a history which might otherwise have disappeared.

Yet debate about the future of the forests, between the public and private sectors and between individuals, continues as mining eats away at forest country, especially near Pinjarra, Jarrahdale and Boddington where Alcoa has big leases, and as bluegums and pines creep across the land further south. (It should be noted that Alcoa is required to reforest under the terms of its lease). Boddington is the site of a mine claimed as 'the second largest producer of gold in Australia'.[148] Gold, rare earths (a plant is planned near Pinjarra), and bauxite have replaced the extraction of Donnybrook stone and gravel. Wood-chipping and a proposed paper mill have roused strong opinions and as a result of these debates, which sometimes have developed into marked demonstrations of opinion, cultural sites in the forests should also include places of confrontation. The unknowing innocence with which nineteenth century men and women regarded the forests has been lost. No longer are the trees regarded as infinite or readily replaced. Lane-Poole's legacy of an active and well-informed department which chose to educate the public with a steady stream of pamphlets and books has dissipated.[149] Western Australia's forests now are places where every change in maintenance or plantation policy stimulates discussion and debate. The forests have been measured, walked upon, harvested and valued differently in the twentieth century. There is no place today for babes in the wood.[150]



Gentle giant has fallen

IT IS with regret that I write my first letter to a newspaper. It concerns the felling of one jarrah tree, a tree that had survived the ravages of time, bush fires and, more importantly, the ravages of the early timber industry.

This particular tree wasn't simply missed by the early timber industry, it was intentionally left because it was such a beautiful tree and it has saddened the hearts of the few men who survive from this era to know that this tree, which probably stood well before European settlement, has been cut down.

Not that many people knew that the tree was there, but it still could have served as a reminder of what the jarrah forests once looked like.

It is my understanding, and I may stand corrected, that all trees to be felled are marked specifically by CALM. If this is so, then it has done us all a grave injustice.

I would like it to be known that my family have been in and around the timber industry for generations and even though, I find some of its methods questionable, I am not against logging.

I suppose the answers, if there are any, will be the usual "we did it by the book" and "these things happen", or "the tree was rotten anyway". Maybe it was starting to go rotten, but no one knew that until it was cut down.

Much ado about one tree, many people may think, but if you have ever visited Wellington Mills you may have visited the King Jarrah. This tree was in the same league.

CALM has been asked whether it will display the butt of this tree at Wellington Mills. To date, there has been no reply to this request.

GEOFF GARDINER, Wellington Mills.

[148] See J. Ferrell, *Becoming Boddington*, the Shire, 1992, pp.362-3 for a description of the mine.

[149] The Forests Department had an enviable record of pamphlet publication which was pursued as recently as the 1970s. Information about specific trees and their cultivation was readily available.

[150] The phrase 'Babes in the wood' is reminiscent of S. Blair's paper delivered to the AHA Conference in Perth, 1994.

Themes

The themes which have emerged from an over-view of forest history are listed below.

1. Tracing the evolution of a continent's special environment.

2. Peopling the continent.

2.4 Migrating

2.4.2 Migrating to seek opportunity. - *early settlement of W.A.*

2.4.5 Changing the face of rural and urban Australia through migration - *immediate post WW 11 policies - mass migration.*

2.5 Promoting settlement on the land through selection and group settlement - *immediate post WW 1 policies - group settlement.*

3. Developing local and regional economies.

3.3 Exploiting natural resources.

3.3.3 Mining - *impact on timber industry.*

3.3.4 Making forests into a saleable resource - *forestry, sandalwood, charcoal burning, wood-chipping.*

3.4 Developing primary production.

3.4.1 Grazing stock - *fences and stock yards,*

3.4.3 Developing agricultural industries - *dairying, orchards, small holdings, bee-keeping - competing interests in the forest region.*

3.6 Establishing lines and networks of communication -

from heliograph messages to wireless to radio, and from tall trees to metal towers.

3.7 Moving goods and people.

3.7.1 Shipping to and from Australian ports - *impact on timber industry.*

3.7.1. 2. Developing harbour facilities - *impact on timber industry.*

3.7.3.1 **Moving goods and people on land.**

3.7.3.1. Building and maintaining railways. - *private timber tramway and railways, government railways - impact on timber industry, creation of markets, transportation of timber, increased access to new forest regions.*

3.7.3.2. Building and maintaining roads - *early tracks through the forest, new roads - improved access.*

3.10 Altering the environment for economic development.

3.10.1 Regulating waterways - *dams, weirs and reservoirs*

3.10.4 Clearing Vegetation. - *ring-barking, clear felling.*

3.13 Developing an Australian construction industry.

3.13.2 Using Australian materials in construction - *timber housing.*

3.14 Developing economic links to Asia. - ***export of sandalwood to Asia***

3.15 Struggling with remoteness - ***isolation of mill towns, self-sufficiency, sense of community.***

3.15.3 Dealing with hazards and disasters - *fire control policies - controlled burns, look-out trees, air control.*

3.17 Financing Australia.

3.17.1. Raising Capital - *development and expansion of timber industry.*

3.21 Catering to tourists - ***conversion of former mill towns to tourist and recreation centres. i.e. Donnelly River, timber tracks as tourist walks, look-out trees as tourist attractions.***

4. Building settlements and towns

4.1 Selecting township sites.- ***mill townships.***

5. Working.

5.2 Organizing workers and work places - ***timber workers unions.***

6. Education.

6.3 Training people for workplace skills - forestry training schools, research and experimental centres, public education, fire prevention, conservation.

7. Governing.

7.5 Developing administrative structures and authorities - *Forest Department, National Parks, Environmental Protection Authority, Department of Conservation and Land Management.*

7.5.2.2 Going to War - impact on timber industry, POW and Civil Alien Corps Camps.

7.5.10 Conserving Australian resources.

7.5.10.1 Conserving fragile environments - *flora and fauna reserves in forest region.*

7.5.10.2 Conserving economically valuable resources - *forest reserves and national parks.*

8. Developing cultural institutions and ways of life.

8.1 Organizing recreation.

8.1.1 Playing and watching organized sports - *sporting competitions between mill towns, axemen's league.*

8.9 Commemorating significant events and people.

8.9.3 Remembering people - *notable characters in the timber industry.*

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The archival material listed below has not all been consulted for this Report but is included in the interests of the project as a whole. The records show the kind of information held. Almost all the Working Plans developed by the Forests Department are kept in the archives, but they have not been listed here for want of time and lack of space.

The state archives of Western Australia are held in the Public Records Office, hereafter WA PRO. They are described in archive notes with an accession number (hereafter AN ACC) or in lists of agencies with a consignment number (WAS CONS). Maps, many of which come from Public Works Department (PWD) are described in notes (CN)

Forests Department AN80/1 ACC934

1920	1686	Working Plan no. 2 Measuring of the Tuart country
1921	189	Plans showing timber tramways and mill sites
1921	778	Firefighting campaign. Information from America and Canada
1922	93	Royal Commission on Forestry
1922	992	Erection of a fire observation tower at Collie
1923	371	Resumption of lands for Group Settlement south of the Blackwood river near Nannup
1924	1239	Planting scheme on Narrogin Water Supply Catchment area adjoining school
1924	1392	Karramindie sandalwood plantation
1924	1789	Proposed sample plot at Bridgetown Timber reserve 18855
1925	167	Sample plot adjoining forestry HQ Dwellingup
1925	1267	Report on the position of Forestry in Australia
1925	1761	Afforestation policy for Western Australia
1925	2052	Map belonging to Prof. Shann showing geological formation as related to timber areas.
1926	1544	Co-operation between the Federal and State governments in the planting of softwoods
1927	1660	Establishment of sample plots at Inglehope
1928	1220	Pardelup Prison Farm pine plantings

1929	453	Survey posts and reference trees - instructions re
1930	1888	Castor Oil bean planting
1932	282	Fire control project 1. Establishment of observation plots at Dwellingup to test effect of light burning on jarrah bush
1932	489	Settlement Schemes
1933	1243	Pemberton HQ
1933	1467	Fire control project 5- fire hazard investigation
1932	732	Information re the "petrified forest" near Denmark
1933	99	Plans showing forest country tapped by roads being constructed in extreme south-west
1934	548	National Park reserve along Manjimup-Pemberton Rd
1936	1252	Working plan compiled by students covering the railway permit area, Dwellingup
1939	924	Proposal for the manufacture of charcoal iron

WAS 92 CONS 3504 item 79b 1956-60 - Maps - general working plan

MAPS CN19 ACC476C

PWD 22261	Plan showing roads to Group settlement areas from Busselton to Augusta, progress made 21/9/1922
PWD 23146	Busselton - Augusta groups - Roads scheme 3, also Commonwealth and State grants ca.1923
PWD 23399	Busselton-Augusta Group settlement ca.1930 - showing areas and group numbers, townsites, roads, rivers, physical features, tracks
PWD 29897	Flax Mill Boyup Brook - flax retting tanks
PWD 26256	Migration Agreement Works, 3000 farms scheme proposed railways 1929-30
PWD 5488	Canning Dam, progress plans 1935
PWD 9970	Greenbushes Mining Registrar's quarters -renovations 1905
PWD 30558	Woorooloo Sanitorium farm colony 1946
PWD 19353	Collie water Supply, property survey 1902
PWD 30717	War Service Land settlement - cottages 1946
PWD 30893	War Service Land settlement scheme dairy buildings 1947

PWD 31068 War Service Land farm buildings and fencing details 1945

PWD 26928 Yanchep Caves tea room [1931]

PWD 27521 Canning reservoir - recreation hall [1934]

PWD 29661 New reinforced concrete wood drying kiln, Pemberton

CN 61 940 C Maps and plans of War Service Land Settlement Scheme 1950s and 1960s includes some dealing with National Parks Board and Department. of Agriculture e.g.

83 - Plan of buildings - Bridgetown

88 - Plan of buildings - John Forrest national Park

89 - Plan of buuildings - Hamelin Bay reserve

91 - Plan of buildings - Nornalup National Park

93 - Plan of buildings - Yanchep National Park

109 - Map of South West showing Crown land project areas c.1960

127 - Plan of Rocky Gully lots A861-A964

131 - Plan of Jerramungup project

MWSS & DD 8255 Catchment areas 1912-1925

MWSS & DD 19559 Harvey irrigation rateable adjustments 1915

Workers' Homes Board

WA PRO, ACC962

116/24 Photographs and ground plans, Workers Homes Bd to British Empire Exhibition

28/44 Post War Housing Plans

606/44 Prefabricated houses - general correspondence

253/46 Timber supplies - reports of special committee to investigate shortage

6766/49 Vol. 1, Prefabricated Timber cottages - Bunning Bros

6767/49 Prefabricated timber houses - Doran type for metropolitan area

2344/50 Redesign of prefabricated timber houses, submission by private architects

2777/50 Vol. 1 Importation of prefab houses

5831/50 Overseas prefabricted houses - tenders received for first quota of 900 houses

3919/51 Imported prefabricated houses - 900 Houses -Master Construction file

7944/51 Imported prefabricated houses - second shipment

680/52 Australian Thermo imported pre-cut houses - storage of second 450

WA PRO ACC1205

1017/14, Timber supplies from and quotes - State Saw Mills, general correspondence

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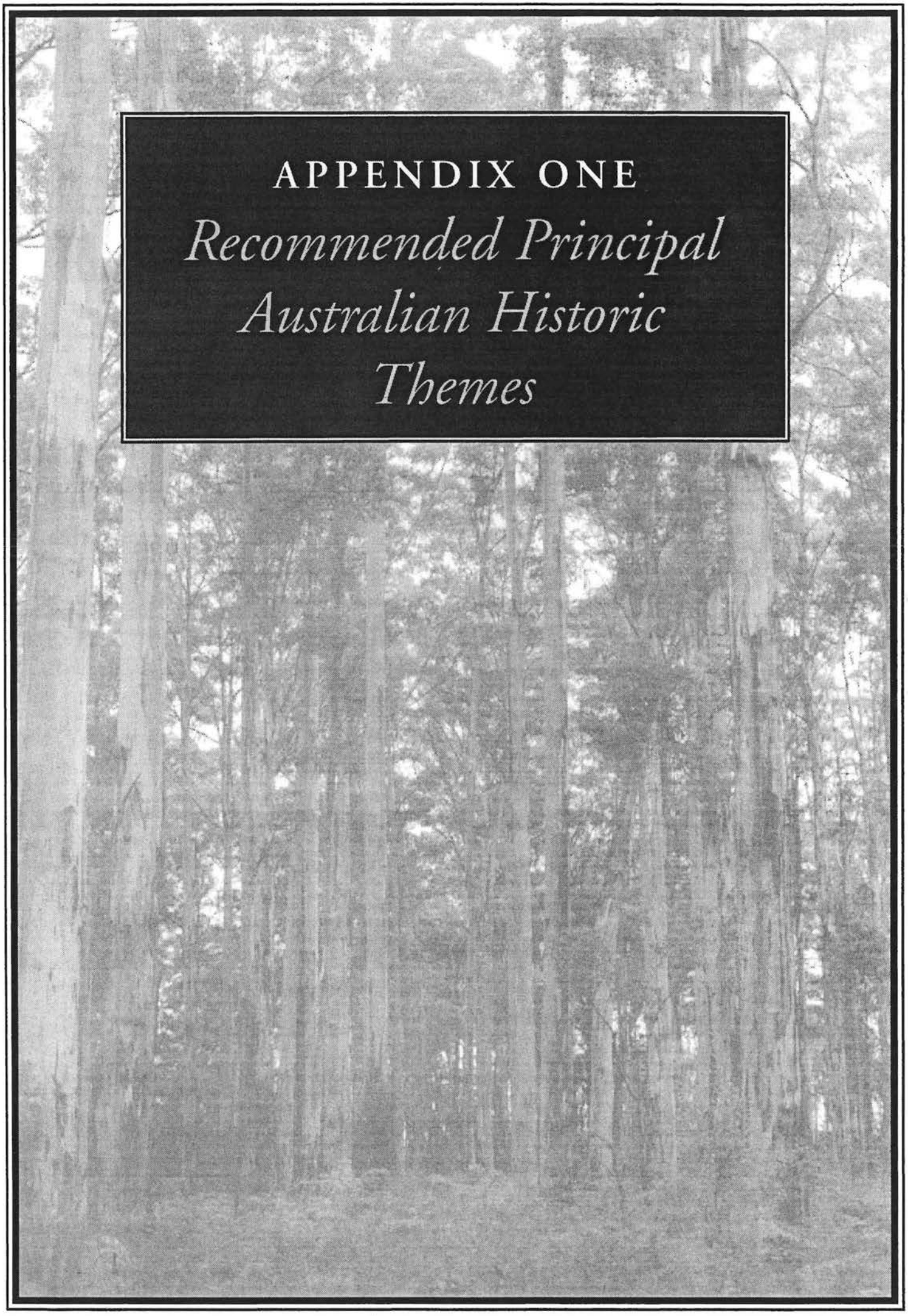


APPENDIX ONE

Recommended Principal Australian Historic Themes

5. Recommended Principal Australian Historic Themes

1. Tracing the evolution of a continent's special environments

[Although the environment exists apart from human consciousness, identifying parts of the environment for special consideration as 'heritage' is very much a human activity. The human factor is recognised in the way this theme and its sub-themes are stated. This approach also recognises that science is constantly expanding our appreciation of the environment.]

1.1. Tracing climatic and topographical change
1.2. Tracing the emergence of and development of Australian plants and animals
1.3. Assessing scientifically diverse environments
1.4. Appreciating the natural wonders of Australia

2. Peopling the continent

[Categories previously used to cover this aspect of heritage, such as settlement, fail to recognise the pre-colonial achievements of Aboriginal people. They also divert attention from more recent movements of immigration.]

2.1. Recovering the experience of Australia's earliest inhabitants
2.2 Appreciating how Aboriginal people adapted themselves to diverse regions before regular contact with other parts of the world
2.3. Coming to Australia as a punishment
2.4. Migrating
- 2.4.1. Migrating to save or preserve a way of life
- 2.4.2. Migrating to seek opportunity
- 2.4.3. Migrating to escape oppression
- 2.4.4. Migrating systematically through organised colonisation
- 2.4.5. Changing the face of rural and urban Australia through migration

2.5. Promoting settlement on the land through selection and group settlement
2.6. Fighting for the land
- 2.6.1. Resisting the advent of Europeans and their animals
- 2.6.2. Displacing Aboriginal people

3. Developing local, regional and national economies

[Geoffrey Blainey conceived Australian history as dominated by the 'tyranny of distance'. It could with equal justice be summed up as the conquest of distance. If new developments in technology had not made it possible to link the continent to distant marketplaces, the Aboriginal economy might have been left undisturbed. The first European 'explorers' were not motivated by idle curiosity. Seeking valuable resources was the root cause of almost every expedition.

It is astonishing to realise how much of what we regard as heritage is the result of activity undertaken for economic gain. The project team made several efforts to break this category into more

than one main theme. All of these failed because they were intellectually unconvincing.]

3.1. Inspecting the coastline
3.2. Surveying the continent and assessing its potential
    3.2.1. Looking for inland seas and waterways
    3.2.2. Looking for overland stock routes
    3.2.3. Prospecting for precious metals
    3.2.4. Looking for land with agricultural potential
    3.2.5. Laying out boundaries
3.3.. Exploiting natural resources
    3.3.1. Hunting
    3.3.2. Fishing and whaling
    3.3.3. Mining
    3.3.4. Making forests into a saleable resource
    3.3.5. Tapping natural energy sources
3.4 Developing primary production
    3.4.1. Grazing stock
    3.4.2. Breeding animals
    3.4.3. Developing agricultural industries
3.5. Recruiting labour
3.6. Establishing lines and networks of communication
    3.6.1. Establishing postal services
    3.6.2 Developing electronic means of communication
3.7. Moving goods and people
    3.7.1. Shipping to and from Australian ports
        3.7.1.1. Safeguarding Australian products for long journeys
        3.7.1.2. Developing harbour facilities
    3.7.2. Making economic use of inland waterways
    3.7.3. Moving goods and people on land
        3.7.3.1. Building and maintaining railways
        3.7.3.2. Building and maintaining roads
        3.7.3.3. Getting fuel to engines
    3.7.4. Moving goods and people by air
3.8. Farming for export under Australian conditions
3.9. Integrating Aboriginal people into the cash economy
3.10. Altering the environment for economic development
    3.10.1. Regulating waterways
    3.10.2. Reclaiming land
    3.10.3. Irrigating land
    3.10.4. Clearing vegetation
3.11. Feeding people
    3.11.1. Using indigenous foodstuffs
    3.11.2. Developing sources of fresh local produce
    3.11.3. Importing foodstuffs
    3.11.4. Preserving food and beverages
    3.11.5. Retailing foods and beverages
3.12. Developing an Australian manufacturing capacity
3.13. Developing an Australian engineering and construction industry
    3.13.1. Building to suit Australian conditions
    3.13.2. Using Australian materials in construction
3.14. Developing economic links to Asia

3.15. Struggling with remoteness, hardship and failure
  3.15.1. Gambling on uncertain climatic conditions and soils
  3.15.2. Going bush
  3.15.3. Dealing with hazards and disasters
3.16. Inventing devices to cope with special Australian problems
3.17. Financing Australia
  3.17.1. Raising capital
  3.17.2. Banking and lending
  3.17.3. Insuring against risk
  3.17.4. Cooperating to raise capital (*co-ops, building societies, etc.*)
3.18. Marketing and retailing
3.19. Informing Australians
  3.19.1 Making, printing and distributing newspapers
  3.19.2. Broadcasting
3.20. Entertaining for profit
3.21. Lodging people
3.21. Catering for tourists
3.22. Selling companionship and sexual services
3.23. Adorning Australians
  3.23.1. Dressing up Australians
  3.23.2. Caring for hair, nails, and shapes
3.24. Treating what ails Australians
  3.24.1. Providing medical and dental services
  3.24.2. Providing hospital services
  3.24.3. Developing alternative approaches to good health

4. Building settlements, towns and cities

[Although many people came to Australia in search of personal gain, they realised the need to cooperate in the building of safe, pleasant urban environments. Australian urbanisation and suburbanisation have special characteristics which set them apart from similar phenomena elsewhere in the world]

4.1. Planning urban settlement
  4.1.1. Selecting township sites
  4.1.2. Making suburbs
  4.1.3. Learning to live with property booms and busts
4.2. Supplying urban services (power, transport, fire prevention, roads, water, light & sewerage)
4.3. Developing urban institutions
4.4. Living with slums, outcasts and homelessness
4.5. Making towns to serve rural Australia
4.6. Remembering significant phases in the development of towns and suburbs

5. Working

[Although a lot of what we call work is related to the economy, most of it is not undertaken for profit. A great deal of the work done in the home is neither paid nor counted as part of the national economy. Some of the most interesting recent social history written about Australia concerns work and workplaces. For all those reasons, working deserves recognition as a separate theme.]

5.1. Working in harsh conditions
  5.1.1. Coping with unemployment
  5.1.2. Coping with dangerous jobs and workplaces
5.2. Organising workers and work places
  5.2.1. Structuring relations between managers and workers
5.3. Caring for workers' dependent children
5.4. Working in offices
5.5. Trying to make crime pay
5.6. Working in the home
5.7. Surviving as Aboriginal people in a white-dominated economy

6. Educating

[Every society educates its young. There was education in Australia before the coming of Europeans. While European education places a great emphasis on schooling, it encompasses much more than formal progression through grades one to twelve. Government has come to play a big role in education, but Australia places more education in private hands than most OECD countries.]

6.1. Forming associations, libraries and institutes for self-education
6.2. Establishing schools
6.3. Training people for workplace skills
6.4. Building a system of higher education
6.5. Educating people in remote places
6.6. Educating people in two cultures

7. Governing

[This theme is as much about self-government as it is about being governed. It includes all the business of politics, including hostility to acts of government.]

7.1. Governing Australia as a province of the British Empire
7.2. Developing institutions of self-government and democracy
  7.2.1. Protesting
  7.2.2. Struggling for inclusion in the political process
  7.2.3. Working to promote civil liberties
  7.2.4. Forming political associations
7.3. Federating Australia
7.4. Governing Australia's colonial possessions
7.5. Developing administrative structures and authorities
  7.5.1. Developing local government authorities
  7.5.2. Providing for the common defence
    7.5.2.1. Preparing to face invasion
    7.5.2.2. Going to war

7.5.3. Controlling entry of persons and disease
7.5.4. Policing Australia
7.5.5. Dispensing justice
7.5.6. Incarcerating the accused and convicted
7.5.7. Providing services and welfare
7.5.8. Enforcing discriminatory legislation
7.5.9. Administering Aboriginal Affairs
7.5.10. Conserving Australian resources
7.5.10.1. Conserving fragile environments
7.5.10.2. Conserving economically valuable resources
7.5.10.3. Conserving Australia's heritage

8. Developing cultural institutions and ways of life

[Australians are more likely to express their sense of identity in terms of a way of life rather than allegiance to an abstract patriotic ideal. One of the achievements of this society has been the creation of a rich existence away from the work place. While some of the activities encompassed in this theme are pursued for profit — horse racing and cinema, for instance — their reason for being is the sheer enjoyment of spectators. While many people could not pursue careers in art, literature, science, entertainment or the church without being paid, those activities do not fit easily into the categories of economy or workplace.]

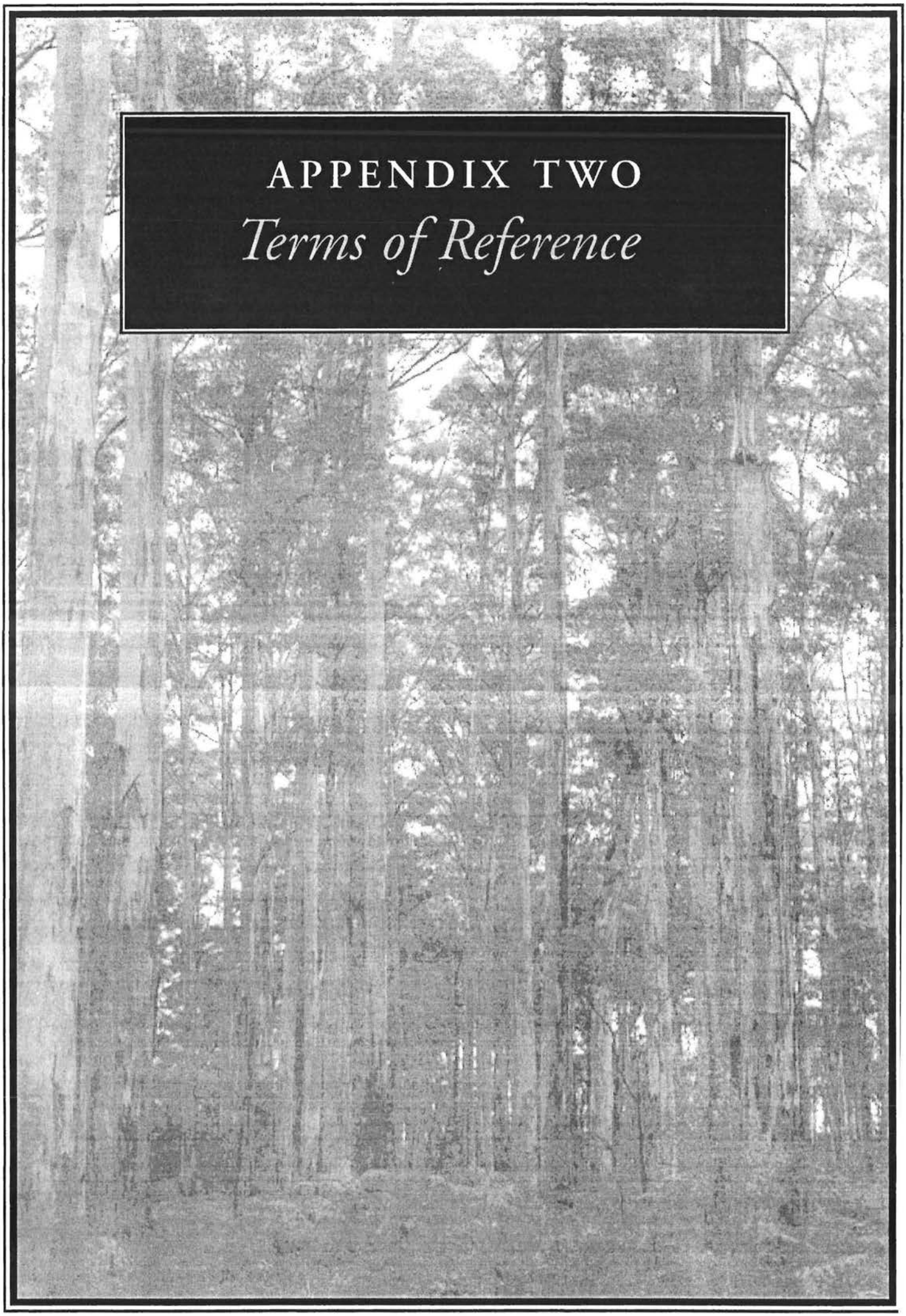
8.1. Organising recreation
8.1.1. Playing and watching organised sports
8.1.2. Betting
8.1.3. Developing public parks and gardens
8.2.. Going to the beach
8.3. Going on holiday
8.4. Eating and drinking
8.5. Forming associations
8.5.1. Associating to preserve traditions and group memories
8.5.2. Associating to help other people
8.5.3. Associating for mutual aid
8.5.4. Associating to pursue common leisure interests
8..6 Worshipping
8.6.1. Maintaining religious traditions and ceremonies
8.6.2. Founding Australian religious institutions
8.6.3. Making places for worship
8.6.4. Evangelising
8.6.4.1. Running city missions
8.6.4.2. Founding and maintaining missions to Australia's indigenous people
8.7. Honouring achievement
8.8. Remembering the fallen
8.9. Commemorating significant events and people
8.9.1. Remembering disasters
8.9.2. Remembering public spectacles
8.9.3. Remembering people
8.10. Pursuing excellence in the arts and sciences
8.10.1. Making music

8.9.2. Creating visual arts
8.9.3. Creating literature
8.9.4. Designing and building fine buildings
8.9.5. Advancing knowledge in science and technology
8.11. Making Australian folklore
8.10.1. Celebrating folk heroes
8.10.2. Myth making and story-telling
8.12. Living in and around Australian homes

9. Marking the phases of life

[When asked to name neglected themes, many of the people who responded to our questionnaire cited themes concerned with stages in life. Although much of the experience of growing up and growing old does not readily relate to particular heritage sites, there are places that can illustrate this important theme. All but three of the phases of life set out below are universal. Everyone has been a baby. Those who do not die in infancy are brought up (however well or badly). The childhood and teenage years expose children to a variety of peer experiences and institutional arrangements, though not everyone joins an organisation or participates in the rituals of courtship. Some orphans have escaped the experience of being in a family; however, surviving orphanages bear adequate witness to that experience. The formation of partnerships, both inside and outside marriage has been the principal activity responsible for bringing many heritage sites into existence. Some people, of course, go through life without ever forming a partnership, but the condition of being single (rather than infirm or dependent) has not in itself brought special kinds of historic places into existence.]

9.1. Bringing babies into the world
9.1.1. Providing maternity clinics and hospitals
9.1.2. Promoting mothers' and babies' health
9.2. Bringing up children
9.3. Growing up
9.3.1. Courting
9.3.2. Joining youth organisations
9.3.3. Being teenagers
9.4. Forming families and partnerships
9.5. Growing old
9.5.1. Retiring
9.5.2. Looking after the infirm and the aged
9.6. Mourning the dead
9.7. Disposing of dead bodies



APPENDIX TWO
Terms of Reference

Department of the ENVIRONMENT SPORT and TERRITORIES

WESTERN AUSTRALIA NATIONAL ESTATE HISTORIC VALUES IDENTIFICATION AND ASSESSMENT PROJECT

TERMS OF REFERENCE

STAGE 1: THEMATIC HISTORY

1. BACKGROUND

Under the National Forest Policy Statement (NFPS), Commonwealth, State and Territory Governments agreed to a framework and process for carrying out comprehensive assessments of the economic, social, environmental and heritage values of forest regions. Once completed, comprehensive regional assessments (CRAs) will provide governments with the information required to make long-term decisions about forest use and management.

The Environment Forest Group (EFG) has entered into negotiations with State government departments in order to undertake CRAs of forest regions in Australia and fulfil their obligations under the NFPS. An important component of each CRA is the identification and assessment of national estate values under the *Australian Heritage Commission Act 1975* and addressing the criteria for inclusion of places on the Register of the National Estate.

A number of project consultancies investigating the cultural values of forest regions are to be undertaken, focussed on places within forests or land-based places related to forest activity.

Forest-related places are understood to include not only places within extant forests, but also places in previously forested areas that have tangible connections to former or current forest exploitation. Thus the sort of places to be investigated may include sites of early land clearance; routes of human movement; sawmills (regardless of location); forest settlements; recreation areas within forests; places associated with forest management such as fire towers, nurseries and experimental plantations; and other places concerned with productive and extractive industries such as grazing, mining, apiculture, charcoal production and lime burning.

2. STUDY AREA

The study area consists of both public and private land within the South-west Forest Region of Western Australia (map, Attachment 1).

3. PROJECT OBJECTIVE

The specific objective of the Western Australia National Estate Historic Values Identification and Assessment Project is to ensure forest-related places of national estate historic value are appropriately protected and managed through the terms of the Regional Forest Agreement. In particular, that they are appropriately considered both within the comprehensive, adequate and representative (CAR) forest reserve system, and in the complementary off-reserve management of the South-west Forest Region.

Projects to investigate Indigenous cultural heritage resources and values are being undertaken separately and are outside the scope of this project.

4. PROJECT STRATEGY

The project is to be undertaken in four stages:

Stage 1: Production of an historic overview including land use history, and identification of historic themes;

Stage 2: Compilation of inventory of identified places and further research required;

Stage 3: Further research and field survey of places identified in Stage 2 gaps analysis; and

Stage 4: Review of the above stages and the assessment of national estate values using Australian Heritage Commission criteria and thresholds developed in previous regional assessments.

This document forms the Terms of Reference for the thematic history component (Stage 1) of the project.

Stage 2 will be undertaken by EFG staff concurrent with Stage 1. A call for tenders for any consultancy projects in Stage 3 will be advertised as soon as possible following completion of Stage 2. It is likely that the fourth, and final, stage will also be undertaken by EFG staff.

STAGE 1: THEMATIC HISTORY

5.1 REQUIREMENTS

The consultant will be required to produce a report of 25,000 - 30,000 words identifying and illustrating historic forest-related themes and general land

use history of the study area. (An historic study was undertaken for the AHC in 1993 for the Southern Forest Region and this work should be accessed but need not be duplicated in full.)

This task will be carried out concurrently with Stage 2. As the consultant will also be required to identify places with potential national estate historic values additional to those identified during the Stage 2 Data Inventory, close liaison with the EFG officer undertaking Stage 2 will be essential.

5.2 METHODOLOGY

- Identify from documentary sources, including historical studies, reports, oral history recordings, ethnography, Municipal Heritage Inventories and State public records, historical themes related to non-Indigenous forest-related activity in the study area. The thematic outline should be consistent with the draft *Principal Australian Historic Themes: A Guide for Heritage Agencies.*
- From the documentary sources used above, provide information to EFG staff on any other forest-related places with potential national estate historical values that were not identified in the Data Audit (Stage 2).

9. FINANCIAL ARRANGEMENTS

Payment will be released in two stages: 75% on receipt of a satisfactory draft report; and the final 25% on acceptance of the final report by the Project Steering Committee.

10. TIMELINES AND REPORTING REQUIREMENTS

The project is to be completed within six weeks of the consultant agreeing to the Letter of Offer.

The consultant must maintain regular contact with the EFG Contact Officer throughout the course of the project at intervals to be agreed upon following signing of the contract.

Four copies in A4 format are required of both the draft and final reports: three of which are to be bound, one unbound.

A full draft report detailing the results of Stage 1 is required four weeks from the commencement of the project. Also to be submitted at this time are copies of relevant documents compiled or collated throughout the analysis process. The report and additional materials will be reviewed by the EFG within one week of receipt. The final report must be submitted by the end of Week 6 in both hard copy and and in Microsoft Word on two 3.5" disks.

11. EFG CONTACT OFFICER

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