

History of conservation reserves in the south-west of Western Australia

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Abstract

Focusing on the Darling Botanical District, reservation in the south-west of Western Australia largely involves the forest estate. The remaining natural bushland today is mainly reserves of State forest and so further opportunities to create new national parks or nature reserves of any significance would generally mean converting a State forest reserve to some other sort of conservation reserve. Thus, the history of Western Australia's State forest reservation is important.

The varied origins of some of the region's well-known and popular national parks are of special interest. Their preservation as conservation reserves generally had little to do with scientific interest and a lot to do with community pleasure in the outdoors and scenery. Their protection from early development had little to do with the flora and habitat protection needs that are the focus of these Symposium proceedings. Factors such as lack of shipping access, the discovery of glittering caverns, and the innovation of excursion railways were involved in saving the day. In contrast, the progressive reservation of State Forest was a hard slog by an insular Forests Department against many opponents.

The creation of a comprehensive system of conservation reserves in this part of Western Australia is an on-going modern phenomenon with continued wide popular support. While there are controversies concerning forest reservation and the conservation of urban bushland, these largely involve matters of detail over particular pieces of land. However, remaining unresolved is controversy over State forest management which might impact upon strategic wildlife habitat. Management of State forest for multiple uses, including ecologically sustainable timber production and wildlife values, is adopted Government policy.

Introduction

Geographical context

The Darling Botanical District is generally synonymous with several significant natural attributes, including the high rainfall area (over 500 mm per annum) of Western Australia's south-west, and a zone of active streams and rivers, whereas the hinterland beyond is largely characterised by more arid conditions and uncoordinated drainage (Beard 1981).

Tall forest and tall woodland formations are confined to this part of the State and today comprise the dominant area of uncleared land. Of particular significance, it forms a large block of generally contiguous reserves of State forest. Created originally to support an export saw milling industry, today's forest management emphasis is on multiple use objectives of which catchment protection for water supply is arguably the most important.

West of the forest of the Darling Plateau, the fringing narrow Swan Coastal Plain is the earliest part of Western Australia that was extensively settled by Europeans. The bulk of this land was released into private ownership within the first hundred years of this settlement, with little consideration given to a need for bushland conservation. Converting uncleared remnants into conservation reserves there now usually requires the buying back of land that is in private ownership. There are situ-

ations where there is added justification to do this when key ground water aquifers within the deep sands of the coastal plain need to be protected from the likelihood of pollution arising out of urban and agricultural development.

Administratively, the Darling Botanical District is also closely synonymous with several regions. These include the Environmental Protection Authority's (EPA) Systems 1, 2 and 6 collectively, which were designated in the early 1970s as part of a State conservation reserve assessment project (Ride 1975). State forest and the bulk of Western Australia's conservation reserves are today managed by the Department of Conservation and Land Management (CALM). The contiguous CALM regions of Southern Forest, Central Forest and Swan (formerly Southern Forest and Metropolitan Regions) are also basically confined to the Darling Botanical District.

Historical context

Over the past 120 years of history of Western Australia's conservation and forest reserve systems, there have been a number of Acts of Parliament passed and consolidated that have enabled;

- land (and waters) to be reserved,
- the provision of degrees of security for reserves against alienation for other purposes, and
- the management of reserves by specific agencies.

Over that period, the principal reserve management agencies have also had name changes, or have been replaced by another agency. The phases of forest and conservation reserve establishment can be summarised as follows:

- **Colonial Era: 1829–1889** Little was appreciated about the relationship of wildlife and habitat dependence, and the need was not seen for conservation reserves in a region which was still relatively undeveloped and unpopulated. Little interest was shown in protecting forest resources.
- **Early Self-Government: 1890–1929** In this brief 40 year period, gold rushes to the Murchison and Eastern Goldfields led to a rapid population increase via immigration and the promotion of railway development. In turn, both events stimulated the creation of recreation-based reserves (e.g. today's John Forrest and Leeuwin-Naturaliste National Parks).

A shift away from labour-intensive shallow fossicking to mechanised deep mining on the goldfields diverted development interest to agricultural expansion, especially in the forested 'south-west' (Darling Botanical District) and adjoining Wheatbelt, aided by a developing railway network.

The emphasis on conservation reserve selection remained oriented toward scenic landscape and recreation with new national parks being created at Pemberton and Nornalup. The need for strategic reserves for habitat protection was ignored, particularly in the Wheatbelt.

At the same time, there was rapid expansion of the timber industry, but also a growing awareness that better protection and management was needed for the forest estate. This need was enhanced by the utilisation of some forested catchments for water supply dams. A significant step was the passing of a Forest Act in 1918, the formation of a Forests Department, and the establishment of a million ha of State forest reserves by 1929.

- **Modern Era: 1930–1969** While there was little change over the period of the Great Depression and World War II, post war reconstruction brought major change. Rapid agricultural, mining, industrial and urban expansion brought an awareness of the need to secure more natural areas for habitat protection and as 'refuges' for passive recreation. There was also an emerging realisation of the need for professional and well-resourced management of reserves, and lobbying for improvement was a feature of this period.

Characteristically, it was an era of land-use conflict between competing developments, and between development and conservation. The few attempts at conflict resolution by Government were not particularly successful. While State forest reservation made some hard-fought gains against agricultural expansion, there was only a slow improvement in the conservation reserve estate. However, the scientific community, mainly through the Australian Academy of Science and the Royal Society of Western Australia, stimulated community interest in the need for the establishment of an adequate conservation reserve system.

Towards the end of this period there was also an

emerging change in forest management toward more intensive productivity, both for timber and broader community benefits of catchment management, recreation and habitat management.

- **Present Era: 1970–1995** There was State Government acknowledgment that sound grounds existed for expansion of Western Australia's conservation reserve system, and also the need for better conflict resolution processes. During this recent period the conservation reserve system dramatically increased.

This period has also been notable for its forest management controversy. This situation developed as the wider community began to appreciate that production management for timber was focussed on the manipulation of the natural structure of production forests. Up to this time, there had been general acceptance that forest production management had little impact on wildlife habitat.

There has been some rationalisation between conflicting land uses and also rationalisation of reserve management agencies through the creation of the Department of Conservation and Land Management. Overall, reserve management has become better resourced during this current period although not necessarily adequately resourced. Unresolved conflicts remain. Mechanisms to deal with many of these are absent or do not have broad acceptance.

Colonial Years (1829 - 1889)

The first 60 years

Although the first European settlement in Western Australia was established at King George Sound (Albany) in 1826, it was an outlier of the New South Wales colonial administration. In practical terms the first settlement was on the Swan River in 1829, under the charge of Captain James Stirling as Lieutenant Governor. Early land development was based on garden, orchard and agricultural plots close to homesteads, spread along the Swan and Canning estuaries and lower river reaches on the coastal plain near Perth. However, pastoral land use expanded in the 1840s, from north of Perth to the Gingin area; northward from the already settled Avon Valley district to the Victoria Plains and New Norcia-Moore River areas; and southward from the Avon Valley, following the inland route between Williams and Albany (Cameron 1981). This development avoided the heavily timbered country of the main forest belt.

For more than half a century the colonists were surrounded by plentiful virgin country, and early conservation regulations were aimed at protecting fauna rather than the habitat upon which the wildlife depended. For example, the early Game Acts had the intention of protecting kangaroos and other fauna to meet the economic and sporting needs of the settlers, and to ensure continuance of Aboriginal food sources.

The first reserves for conservation purposes were set up under the Land Regulations for the Colony of 1872. Another set of Land Regulations enabling the creation of

reserves was promulgated in 1887, and it was not until a new Land Act was passed in 1898 that previous land regulations were consolidated. Perth Park (now Kings Park) was the first of the State's significant bushland reserves to be created under the early Land Regulations. The first part of this Park was established on the suggestion made in 1871 by Governor Sir Frederick Weld. Following gazettal of the 1872 Land Regulations, he was able to approve the setting aside of 432 acres (about 200ha) for the purpose of "public park and recreation" on October 1, 1872.

Of interest, 1872 was also the year that Yellowstone National Park had been set aside by the US Congress, although the national park idea had an earlier beginning than that of Cornelius Hedges for Yellowstone in 1870. In Europe in 1810, the English poet, William Wordsworth, put forward a notional idea for the Cumberland Lake District as being a 'sort of national property.' Some 40 years before Yellowstone, the American artist George Catlin in 1832 conceived a similar concept for the Dakota prairies and its plains Indians providing 'a nation's park'.

Towards self government

In 1880, the colony of Western Australia was granted representative government, a step toward eventual responsible government (*i.e.* self-government). Towards the end of the decade, when the population was about 40 000, the colony was ready to assume responsible government, and this move was spearheaded by Sir John Forrest, then Surveyor General and Commissioner of Crown Lands, and a Member of the colony's Legislative Council. Land policy and administration was the principal issue driving self government and Forrest's report to the Legislative Council in 1889 on land policy was critical of development constraints while an Imperial Government in London still maintained a fair measure of control over the administrative affairs of Western Australia (Forrest 1889b).

In the following year, 1890, a *Western Australia Constitution Bill* was presented by the Imperial Government to the House of Commons, aimed at granting self government to the Colony. A Select Committee of the Commons had been appointed to inquire into the proposal for this remote and little-known colony, and it took evidence from its Governor, Sir Frederick Napier Broome, who had travelled to London. Forest conservation in the Colony was only briefly covered by questions from the Select Committee and the Governor's recorded answers are a fair assessment of the situation at that time (Anon 1890);

- *Is there any system of forest conservation; under what rules are the forests allowed to be worked?*

There has been some attempt at it, but forest conservation is still in a very rudimentary state. There was an inspector of forests appointed some time ago, and there were some regulations made under legislation in connection with the matter, but they have been insufficiently carried out, and forest conservation can hardly be said to be initiated yet. The fact is that the whole of the south-west division is so thickly covered with forests that the great desire of everybody is to get rid of as many trees as they possibly can. Of course the day will

come, and even now is, when the forests ought to be preserved from waste.

- *Practically, are people allowed to cut wood as they like?*

No, that is dealt with in the Land Regulations; they must obtain licences and pay fees.

- *But are they allowed to cut what trees they like?*

Yes there is very little restriction upon them; not so much as there ought to be, I think: some system of working the forests carefully and not wastefully ought to be introduced.

It is interesting to note that early Timber Regulations under Western Australian colonial land legislation, and later that of its own Parliament, restricted timber felling to extremely large trees, the dimensions of which would now be uncommon, particularly in jarrah forest.

A starting point

Since late colonial times Western Australia has been divided into several Land Divisions in which varying land release and settlement policies could be applied. It had long been thought that agricultural potential was basically confined to the South West Land Division, which initially extended from the Northampton area in the north through Cunderdin, to Bremer Bay near Albany in the south. It was originally intended that broadscale releases of land into private ownership (*i.e.* freehold) would be restricted to this Division and that land development elsewhere would be covered by leases of land retained in Crown (public) ownership. On the eve of self government in 1890, the South West Land Division was described (Forrest 1889a) as follows;

This division contains 67,000 square miles [194 000 km²], and comprises the most temperate part of Western Australia. It is that portion of the Colony first settled, and in which about 39,000 out of the whole population of 42,300 reside.

The South-Western corner is heavily timbered, and is fairly well watered and capable of supporting a large population. It is generally an undulating country, and, with the exception of the Darling Range and a few other small ranges, has no extensive mountain ranges.

Numerous rivers enter the coast within this division, but they are all very short and merely drain the country within 100 miles [160 km] of the coast.

The work and expense of clearing the land has proved very laborious and very great, but, when the ground is properly prepared, a fair crop can be depended upon.

In its natural state it takes about 10 acres [4 ha] to keep a sheep, but with clearing and improving it will keep a sheep to two acres [0.8 ha], and in choice places a sheep to one acre [0.4 ha].

It is estimated that at the present time there are depasturing, within this division, 866,229 sheep, 52,415 cattle, and 29,786 horses.

The climate is very good, and the rainfall varies from 14 inches [350 mm] in the northern and inland portions, to 45 inches [1125 mm] in the southern portion of the division.

The area leased from the Crown for pastoral purposes at the present time is 24,514 square miles [63 450 km²].

Early Self-Government (1890 - 1929)

Perth Park (Kings Park)

Originally created in 1872, Perth Park was enlarged in 1890 at the suggestion of Sir John Forrest, who by that time had become Premier of Western Australia. In 1895, a management committee for the Park was formed and Forrest became its first President. Under his patronage, two important pieces of legislation were passed to both enable management of the Park and to provide security against it being alienated for other purposes. Both pieces of legislation were applicable to other reserves.

The *Parks and Reserves Act* was passed in 1895, enabling the government to create boards of management for reserves and providing such boards with powers to manage the areas vested in them. Under this legislation, Sir John Forrest's management committee became the Perth Park Board. In 1899, the *Permanent Reserves Act* was passed. It too was initiated by Sir John Forrest to provide Parliamentary protection against the alienation for other uses of "Public Parks". However, his Parliamentary colleague and also a member of the Perth Park Board, Sir Winthrop Hackett, had the original Bill changed in the Legislative Council to provide for the concept of classifying reserves as A, B or C, regardless of their purpose, and this was passed.

Under Hackett's concept, class A reserves became the most secure, requiring an Act of Parliament to vary their boundaries, change their purpose or cancel them. B and C class reserves could be changed without the need for Parliament's consent, but Parliament had to be given an explanation in the case of B class reserves.

Shortly afterwards, in 1901, the name of Perth Park was changed to Kings Park. In its short history to that point the Park had stimulated the production of the necessary primary legislative tools to protect and manage reserves - security of purpose, and the appointment of statutory managers with powers to manage (Australian Academy of Science 1962; Christensen 1992).

Early forest reservation

During the 1890s, forest conservation and management in the southern Australian states followed somewhat parallel lines. In fact, Western Australia's first Conservator of Forests, John Ednie-Brown, became a common link in the efforts of several states to come to grips with forest conservation (Powell 1976). Forest reservation and timber cutting initially came under the jurisdiction of colonial land administration agencies. However, forest management needs conflicted with the primary purpose of these "Land Departments", that of promoting land settlement and clearing policies for agricultural production.

Whilst allowing timber to be cut aided settlers in taking up the cleared land, retaining forest land as a sustainable resource was seen by Australian land administrators as "locking up" the land. In Victoria there were proposals to establish "State forest" as early as 1865, but none of the several Forest Bills presented to Parliament between 1879 and 1892 became law. George Perrin, Victoria's first Conservator of Forests, continued to head a small division within the Lands Department; he died in office in 1900 and was not replaced for some years.

Victoria at last proclaimed a *Forest Act* in 1907, and a new Conservator (A McKay) was armed with new powers.

Before becoming Western Australia's first Conservator of Forests in 1896, John Ednie-Brown had been South Australia's first Conservator of Forests in the late 1870s and subsequently moved to NSW in 1889 to become that state's Director-General of Forests. Like George Perrin in Victoria, when Ednie-Brown came to Western Australia he headed a Woods and Forests "Department" (*i.e.* Division) within the Lands Department. Ednie-Brown's untimely death three years later also prevented any real advance in forest conservation and management in Western Australia, and as in Victoria no trained forester was appointed to replace him for many years. (Forests Department 1969; Underwood 1991).

John Ednie-Brown recorded the following (Fraser 1903);

I am, never the-less, pleased to be able to state that the forest's of Western Australia are yet practically unharmed for all purposes of successful conservation and ordinary thinnings and clearings of the matured timber...

The forests are nature's gift, and should be looked upon and dealt with accordingly, as an inestimable inheritance of great commercial and climatic value; besides much of the land upon which the best timber grows is, as a rule, of little or no value for agricultural purposes, and I maintain, without fear of logical contradiction, that what is now upon it is the very best kind of crop that will ever be seen there. To destroy it therefore, for the sake of a few more blades of grass, is suicidal and reprehensible in the extreme.

At about this time, a Royal Commission into forestry matters in Western Australia had been held and a Forest Advisory Board established to consider applications for timber cutting concessions. Without specific forestry legislation under which forested land could be reserved, protection against agricultural selection in Western Australia was afforded by the creation of numerous reserves under land legislation, generally having the purpose of "Timber: Government Requirements". By 1910 a dozen or so of these existed (Dept. Lands and Surveys File 2507/93 Vol. 3), totalling 261 095 ha and were administered by the Woods and Forests "Department" of the Lands Department, headed by an Inspector, using Timber Regulations promulgated under land legislation. However, these reserves were Class C and therefore insecure against disposal for farm release.

South Dandalup Nature Reserve

Focused on the catchment of the South Dandalup River between Pinjarra and Bannister, the former "South Dandalup" nature reserve is sometimes also referred to as the "Pinjarra Wildlife Reserve" or "Bannister Flora and Fauna Reserve". It was Western Australia's first nature reserve, was large at 64 000 ha, had a scientific basis (for that time) to its creation, and was subsequently cancelled to permit timber cutting and orcharding.

In the 1880s scientific professionalism in Australia was increasing, and in 1888 the Australasian Association for the Advancement of Science was formed. The Association held a meeting in Adelaide in 1893, and a con-

cept was developed for establishing conservation reserves within Australia. At this time, there was a scattering of reserves close to capital cities that were based on scenic landscape and associated recreation interest. However, the Association's concept was oriented toward habitat protection, with the reserves controlled by local honorary trustees and supported by Government grants.

The Association decided to approach the Western Australian Government to have Rottneest Island, near Perth, and the Abrolhos archipelago, near Geraldton set aside for this purpose. These suggested sites were not set aside, but Premier Sir John Forrest invited Bernard Woodward, the Director of the Western Australian Museum, to select another site; he chose the South Dandalup forest area.

At the time, Bernard Woodward considered this area to be difficult heavily-forested country, and so nobody was seeking it for agricultural development. The timber industry was then focussed further north at Jarrahdale and Canning Mills. The selection of the South Dandalup area was supported by the Premier and the reserve for "Flora and Fauna" was gazetted in 1894. It was 64 000 ha in extent, and was bound in time to cause problems in "locking up" so much land and timber close to settled areas. Unfortunately, in 1894 the legislation that eventually afforded Perth Park its protective management and security of purpose had not been passed. Had it been possible to invoke these provisions immediately, the fate of the "South Dandalup" nature reserve might have been different.

Within a few years of its creation, attempts had started to have the timber in the nature reserve made available for commercial exploitation. John Ednie-Brown, the new Conservator of Forests, for example, commented in a memo to the Minister for Lands in 1897 (Lands Dept. File 2507/93);

There is some very fine timber upon this reserve but it is simply going to waste and should certainly be utilised.

Sir John Forrest apparently withdrew his previous support for the reserve, and agitation for timber cutting and agricultural release for orcharding in valley land continued. In 1901, conditional permission to cut timber on the reserve was granted. Woods and Forest staff subsequently proposed cancellation of the reserve, causing Woodward to intercede. In 1902 he sought legislation to have the reserve vested in Trustees, but this was rejected by Cabinet, which instead proposed that it be opened for timber cutting. In the following year, 1903, a Royal Commission on forestry recommended that further timber cutting in the nature reserve should cease, but this too appeared to have had little effect.

By 1907, various attempts to cancel or reduce the reserve's size had been warded off, but a permit to cut timber had been granted to a large milling concern, Whittaker Bros. On May 28 in 1907, Bernard Woodward delivered a lecture to the West Australian Natural History Society (forerunner to today's Royal Society of Western Australia) and chose as his topic "National Parks and the Fauna and Flora Reserves in Australasia". In his talk, Woodward gave an account of the movement for conservation reserves in the various Australian states and New Zealand, and reported on the unsatisfac-

tory situation of the South Dandalup nature reserve. Arising out of the ensuing discussion, the Society resolved to petition the Governor to have the nature reserve declared a national park, and be vested in trustees to manage.

The petition was conveyed by Governor Sir Frederick Bedford to the Premier, J Moore, in August 1907. Premier Moore sought a report on the matter from the Lands Department. Officials, including the Surveyor General and Acting Inspector General of Forests, opposed the idea of vesting the reserve in trustees for a national park as it would "lock up" a large tract of valuable jarrah forest for the "mere preservation of flora and fauna". By this time, a number of water catchment reserves in the forest area further north, between the York Road and Jarrahdale, had also been declared under land legislation, totalling over 100 000 ha. It was therefore proposed to set apart the protected Mundaring Catchment Area as a reserve for the protection of "Native Flora and Fauna". However this never occurred and the purpose of the South Dandalup nature reserve itself was converted to "Timber - Government Requirements" in 1911, and subsequently became incorporated into State Forest no. 14 (Dept. Lands and Survey File 2507/93, Vols 1 and 2; Woodward 1907; Australian Academy of Science 1962; Conservation Council 1980; Christensen 1992).

South-west cave reserves

The existence of numerous caves in the Leeuwin-Naturaliste area had been known by early residents since at least the 1870s. As some of these became more widely known and visited, there was some local concern regarding the destruction of some of the glittering formations they contained. On the urgent representation of Mrs John Brockman, the Minister for Lands, George Throssel, commissioned an exhaustive survey and inventory to be made of the district's caves. Of particular interest is the approach taken to do this.

In 1894, the first step was to declare a reserve of 6 600 ha (Reserve 2565) over vacant Crown land in the Margaret River-Augusta area. This was designed as a holding action to prevent further farmland releases until the cave survey and inventory had been completed. During the next several years, a Lands Department team under the Chief Inspector of Lands, Charles Erskine May, explored and catalogued the caves.

Erskine May presented his report to the Government in 1900, in which numerous caves and the glittering decorations were eloquently described. By this time Western Australia had experienced the main goldrush era and the majority of its population was now residing in major towns in the less-hospitable Eastern and Murchison Goldfields but linked to Perth by an efficient rail system. In his report, May saw the development of the caves as contemporary resort attractions, with the provision of a "sanatorium" on the Margaret River as a 'national' opportunity of fostering health and recreation (Erskine May 1900);

"..... to the goldfields especially, the Margaret River should be the Blue Mountains of NSW, the Derwent of Tasmania or the Lakes of New Zealand when they are making a holiday".

The key to this concept was the existing rail link from Perth to Busselton, providing reliable and comfortable transport from the goldfields as well as from Perth. In 1901 a Caves Committee was set up to recommend on the implementation of Erskine May's report. This resulted in the cancellation of the original 'holding' reserve and the simultaneous gazettal of a dozen smaller cave reserves in 1902. Unlike the besieged "South Dandalup" nature reserve (which had been gazetted before enactment of the Permanent Reserves Act), all were afforded Class A security and vested in the Committee as a properly constituted board of management under the *Parks and Reserves Act*.

Caves House at Yallingup was developed as a guest house by the Board, and nearby Yallingup Cave was provided with electric lighting to prevent formations from being damaged by other smoke-producing forms of illumination. Caves Road was constructed to link about a dozen "fully stepped and staired" caves to the accommodation centre at Yallingup and the railhead at Busselton. From Busselton, horse-drawn conveyances initially took visitors to their accommodation and, later, motor vehicles were used. A marketing innovation was the issue of "single cost" excursion vouchers that covered both the rail and road journeys, accommodation and cave entrance fees. Subsequently, the Caves Board had the caves at Yanchep vested in it and it established camping and tent-hire facilities in that reserve.

The Caves Board existed until 1910, after which it ceased to function. Responsibility for the cave reserves was transferred to the State Hotels Department in 1914, which had responsibility for running hotels in wheatbelt "frontier" towns to accommodate the many prospective land seekers, agents and commercial travellers active during that era. When the Department was closed in 1960, administration of the cave reserves reverted back to the Lands Department. Sometime later the reserves were passed on to the State Gardens Board. This Board had been formed in 1920 to manage a number of small parks and gardens within Perth's city precinct but soon found itself responsible for a number of national parks and other unvested bushland reserves, often distant from Perth. The cave reserves eventually became the core of the Leeuwin-Naturaliste National Park (Erskine May 1900, 1903; Australian Academy of Science 1962; Fraser, 1903; Mulcahy *et al.* 1988).

John Forrest National Park

Prior to 1895, the Eastern Railway to Northam and its link to the Great Southern Railway to Albany, passed through the Darling Scarp south of Greenmount and was routed via present-day Darlington and Mundaring. A better grade was subsequently located via the Jane Brook valley, north of Greenmount, and this alternative route was opened in 1895. The genesis of John Forrest National Park is directly linked to this new railway, and the reliability and comfort that rail travel provided.

Near the point where the railway entered the valley and Jane Brook leaves is the popular Rocky Pool. This was only a short downhill walk from the new Swan View Railway Station. The first part of today's national park was set aside here in 1895 in the form of two reserves, one for "Public Park" and the other for "Public Utility". In 1900 a more extensive reserve for "Parkland"

was created upstream of Rocky Pool and excursion sidings constructed. A year later in 1901, the "Public Utility" reserve near Rocky Pool was also converted to the purpose of "Parkland".

While official correspondence and plans in 1901 referred to the area as a "national park", it was not until 1926 that the main reserve had its purpose changed from "Parklands" to "National Park and Native Game". For quite some time afterwards the Park was referred to as "The National Park". At one time, all three reserves were vested in the former Greenmount Road Board, but came across to the newly formed State Gardens Board just prior to the Great Depression. After World War II, the State Garden Board was transformed into the original National Parks Board (and like the Kings Park Board, also operated under the Parks and Reserves Act), to be subsequently replaced by a National Parks Authority in 1976 (operating under its own Act), and in 1971 the Park was officially named "John Forrest National Park" (Australian Academy of Science 1962; Dept. Land Administration reserves database).

Other "Hills" attractions close to Perth had similar histories relating to rail accessibility, although not all sites were available for parkland reservation. When constructed, Mundaring Weir was an immense attraction and the construction railway became an excursion railway to the site. Subsequently motor transport replaced this, and it was the drive to Mundaring Weir via Kalamunda that was later to promote early legislation for protecting wildflowers. The road access from Gosnells railway station to Victoria Reservoir was also promoted as a tourist drive. Further south, the Serpentine Falls also had an early tourist history with people initially travelling via the railway to Mundijong. In 1911, it was reported that "trainloads of excursionists" were visiting the falls every wildflower season (National Parks Authority 1992).

Pemberton National Parks

The two principal national parks that were originally created in the karri forest near Pemberton are part of several reserves collectively referred to as the "Pemberton National Parks". Following John Ednie-Brown's death while the State's first Conservator of Forests, Mr V G Richardson, an Inspector of Forests, held the position of Acting Conservator.

The first national park in this area was proposed by Richardson in 1901. The Acting Conservator sent a file minute to his superior, the Under Secretary for Lands suggesting that a "fine patch" of karri forest on the Vasse Road "be reserved as a sort of National Park, so as to allow posterity to see what the virgin karri forests were like". Cecil Clifton, the Under Secretary of Lands, was enthusiastically supportive and hoped that the selected patch would have "some really noble trees on it". Richardson then charged Forest Ranger H S Brockman to select one or two patches of forest, including Beedelup Falls if possible, up to nine or ten thousand acres (about 4000-4500 ha) in area "as it would be inadvisable to lock up too large an area of good land as a Forest Reserve."

Within 20 days of Richardson making the original suggestion to Cecil Clifton, Brockman had returned a map showing two blocks of karri forest that should be

reserved as National Parks, Beedelup and Warren. They were subsequently gazetted as timber reserves rather than as national parks, probably so that the Acting Conservator of Forests could maintain a protective interest. However, not being 'A' Class, pieces of both reserves were progressively whittled away to provide farm grants and by 1909 parts of the remainder were sought for timber cutting and timber railway routes by the State Sawmills Department. The Under Secretary for Lands finally settled this insecure situation by having the boundaries of the reserves rationalised to allow passage of the timber railways, having both reserves include replacement areas of forest, and persuading the Government to secure them once and for all as Class 'A' national parks to protect the original concept initiated by the Acting Conservator of Forests. Thus, both national parks became a reality in 1909 after being progressively shifted from their original locations (Dept. of Lands and Survey File 74/01).

The Forests Department

A federation of Australian self-governing States was created on January 1, 1901. Forestry, however, does not seem to have been considered very seriously in the conventions leading up to federation and forest ownership and management remained with the individual states rather than being transferred to the national government. In general, although the timber industry was an important part of the economics of the States, scientific forestry was not vigorously pursued before 1910 in Western Australia, Tasmania or Queensland.

The first Interstate Forestry Conference was held in 1911 and academic forest training facilities were being established in some states. Scientific forestry advanced even further in 1914 when the British Association for the Advancement of Science convened a special conference in Australia (Powell 1976). One of the visitors was D E (later Sir David) Hutchins, a leading forester with wide experience in India and South Africa. Hutchins was subsequently invited to report on the forests of each state and this report was published in 1916 by the Western Australian Government (Hutchins 1916), indicating the government's deep interest at this time in coming to grips with forest management in Western Australia. Professional forestry was given a boost by Hutchins' activities and his report became the basis of a new move towards an Australia-wide management policy.

In Western Australia, in 1916, the State Government appointed C E Lane Poole to be the new Conservator of Forests. A graduate of a highly regarded European forest training centre and with subsequent colonial forestry experience, Lane Poole was primarily responsible for drafting Western Australia's *Forest Act* (Forests Department 1969; Underwood 1991) and drew on parts of Hutchins' report. Passed in December 1918, the Act received the royal assent in January 1919 and a new Forests Department was formed, separate from the Lands Department. Of additional importance, the Act enabled State forest and timber reserves to be created under its own provisions, with 'conveyancing' processing conducted by the Forests Department itself, instead of using Land Act provisions and Lands Department officials.

One of the first tasks of the new Forests Department was to survey and classify Crown lands for their timber

potential. Although by 1921 close on a million ha of forested land had been classified for retention from agricultural development, reservation as State forest had become a slow process. The Government of the day still showed more interest in agricultural land settlement, and a number of farm settlement schemes had come into operation following the close of the Great War in 1918. These had the objective of settling returning soldiers and encouraging immigration from Britain. However, a change of government in 1924 resulted in substantial increases in State forest reservation. By the end of 1929, the centenary year of the founding of Western Australia, a million ha of State forest had been proclaimed. Amongst the first areas to be covered by declared State forest under the new legislation were the Mundaring and Perth water supply reserves, that were once considered for the additional purpose of nature conservation in lieu of the cancelled "South Dandalup" nature reserve (Forests Department 1969; Mulcahy *et al.* 1988; Underwood 1991; Christensen 1992).

From its earliest years, the Forests Department and its Conservator set about promoting the principles of forest preservation and management, and 'Arbor Day' was established as an annual institution. In 1920, the Department under Lane Poole published "Notes on the Forests and Forest Products and Industries of Western Australia", to present in 'popular form' information on the objectives of forest management. A second and enlarged edition was published in 1921, in which the silvicultural concept of "sustained yield" is explained (Forests Department 1921);

Forest Capital and Forest Interest:

The "capital" of a forest may be defined as the total amount of marketable timber it contains: the "interest" is the total annual growth of the trees: in other words, the percentage by which they increase in volume. In a forest in which a large proportion of the trees are mature or over-mature, the ratio of annual growth is relatively small; in the case of a forest which contains a large proportion of young and immature trees, the ratio of annual growth is relatively large. In a "natural" forest, that is a forest which has received little or no attention at the hands of a skilled forester, the annual growth is much less than is the case in a "cultivated" forest. In a "natural" forest there are to be found many imperfect trees - misshapen, fire-damaged, or otherwise defective and incapable of developing into trees suitable for milling purposes. In a "cultivated" forest all these imperfect trees would have to be removed, and the space they occupied filled with trees capable of developing into marketable timber. Forest cultivation, therefore, increases the yield of timber: in other words, increases the annual interest on the forest capital.

"A Primer of Forestry" was also produced and issued to schools through the Department of Education. The Second Edition of this work, published in 1925, describes the 'cultivation' of a natural (or wild) forest system to produce the so-called "normal" forest of centuries-old European tradition (Department of Education 1925);

The 'cultivated' forest already referred to is the ideal of modern scientific forestry. In France, Belgium, and Germany the whole of the forests are cultivated, and in other European countries the process of converting 'wild' or 'uncultivated' forest to 'cultivated' ones is proceeding

apace. In Australia, with the exception of certain plantations, mainly of exotic trees, the forests are still uncultivated, but in every State the process of conversion is being pushed on. The effect of cultivation upon a natural forest is to increase very materially the amount of timber which the forest can yield annually without in any way diminishing its productive power.

It was this concept of converting a natural forest ecosystem into 'younger' and greater wood-yielding production forests that primarily led to the environmental concerns of a future generation.

Karri National Parks

In the early days of the Swan River Colony, very little was known of the south coast region. Although the settlements of Albany and Augusta are amongst the State's earliest (1827 and 1830 respectively), both were established from the sea and their hinterlands and the coast between them was little known. Coastal landings were difficult due to cliffs, beaches with formidable breaking waves, and inlets with sand-barred mouths. Behind the coastline are lines of swamps and river inlets and estuaries, and a hinterland of heavy forest.

In 1830/31, an exploration party led by Captain Bannister attempted to determine a line that could be followed and developed as an overland route linking Perth to Albany. In the vicinity of "Nornor-up" (Nornalup) the party passed through forests of "blue gum". Bannister was amazed at their size (Cross 1833);

..... if others had not seen them, I should be afraid to speak of their magnitude; I measured one, it was breast high, forty two feet [14m] in circumference; in height, before a branch, 140 or 150 [about 50m] we thought at least, and as straight as the barrel of a gun.....

Some time afterwards, the existence of such forests of karri trees around Nornalup Inlet was confirmed by former sealers at Albany, and a syndicate of Albany residents chartered a boat to examine this potentially lucrative resource. However, while the forest of enormous trees was confirmed, so was the difficulty of shipping timber out of the shallow and barred estuary. In 1832 a party of sailors were sent in an open whaleboat to explore the little known coast inshore. They became stranded on Warren Beach when sheltering from a storm, and walked much of the future D'Entrecasteaux National Park coast to reach Augusta. A decade later, the naturalists James Drummond and John Gilbert attempted to reach Albany from Augusta (i.e. King George Sound and Cape Leeuwin areas, respectively). However, after spending several days in a bewildering maze of swamps in the Scott River-Gingalup Swamps area, they turned back to Augusta. None of these expeditions provided information that the region's timber and land resources could be readily exploited.

Later in the century Ferdinand von Mueller produced a report on Western Australia's forest resources which described the extent of karri forests near the Warren, Shannon, Donnelly, Walpole and Gardiner Rivers. He considered that karri timber would doubtless become important for the timber trade if inlets of the south coast wilderness, between Cape Augusta and Albany, could be developed for shipping. Development headed towards the south coast, in the vicinity of Pemberton

and Denmark, in the late 1890s, and it was railways that were used to access forest and to transport milled timber to ports at Bunbury and Albany. However, the forested Frankland and Shannon valleys posed problems for heavy-railway development, which would have assisted forest clearing for agricultural expansion. By the mid 1920s more and more of the forest in the region was being protected by State forest reservations. However, wider knowledge of the south coast region increased as the milling industry expanded. Group Settlement schemes based on dairying were established in some areas cleared of forest, sometimes by the wasteful process of tree ring-barking. Above all, the new popularity of the motor car and their adventurous owners meant that previously unvisited places were being promoted.

The 1924/25 edition of The Western Australian Tourists Guide and Hotel and Boarding House Directory, under the heading "The Inlets and Rivers of the South Coast - A Great National Asset", stated (Government Tourist Bureau 1925);

The whole region is a succession of scenic beauties and desirable spots which offer innumerable attractions to the sportsman. Those who wish to make the best of the Inlet Country must camp out, and the only difficulty they are likely to experience is that of deciding where to pitch their tents in a district which presents so many favourable situations. Among the rivers and inlets one finds a country that is unhackneyed, for its delights can be enjoyed only by those who are prepared to camp out and to put aside for a time the formalities of city life. But none can go there without benefit from a health point. It is proposed that a big area adjoining Nornalup shall be reserved for all time as a National Park and tourist resort, and the proposal is a wise one. Meantime, in that marvellous country Nature is still primitive, and that fact alone is a powerful lure to many.

The original national park was referred to as the Nornalup National Park, after the name of the inlet on which it was focussed, and adjacent town. A series of contiguous reserves for "National Park" were first set aside here in August 1924, with some small additions in 1926. While the total area was over 12 500 ha, most of the reserved land was Class "C". The beginnings of this Park are more adequately told, however, by Fernie & Fernie (1989).

The Nornalup Reserves Board was set up under the *Parks and Reserves Act*, on the December 5, 1924 and the national park at Nornalup Inlet was placed under its control. The Board consisted of the Under Secretary for Lands, the Surveyor General and the Conservator of Forests. On the October 27 1939 the Town Planning Commissioner was added to the Board. The Director of the Tourist Bureau became a member of the Board on the 22nd March 1946. Although Land Department records indicate very little activity by the Board in controlling and improving its reserves, by-laws were laid down by the Board to control the park. The Board was cancelled in 1947 and all its reserves were vested in the State Gardens Board. The members of the cancelled Board were already members of the State Gardens Board.

By the late 1920s a significant town had developed at nearby Pemberton, focused on timber milling and ser-

vicing the district's farm settlers. This led to the formation of another board of management that became responsible for the "Pemberton National Parks". During 1928, moves were made by the Pemberton Parents and Citizens Association to have the hillside opposite the town on Big Brook reserved for scenic purposes. The Minister for Lands agreed and on May 16 the Pemberton National Parks Board was constituted under the *Parks and Reserves Act*. Comprising basically local people, the Board subsequently had the Warren and Beedelup National Parks and other reserves vested in it. Local Forest Department staff provided significant assistance with management of these Parks and the Board remained active until 1976, when it was dissolved and the "Pemberton National Parks" were transferred to the then newly-formed National Parks Authority (Australian Academy of Science 1962; Fernie & Fernie 1989).

Conservation reserves elsewhere in WA

A few flora reserves were created in the period up to 1929, but mainly to protect "novelties" like the Albany pitcher plant, boronia, and the red flowering gum. Large unvested National Parks were also created over the Stirling and Porongorup Ranges. However, of particular significance, an "A" Class flora and fauna reserve was gazetted over Barrow Island in the State's remote north-west in 1908, and in 1929 the Abrolhos Islands off Geraldton were declared a reserve for the "Protection of Flora, Public Recreation and Tourist Resort" and vested in a Board of Control (Australian Academy of Science 1962).

The period during and after the Great War saw an extensive expansion of the agricultural development in the wheatbelt, adjacent to the Darling Botanical District. This was aided by an extension of the railway network and a decline of employment opportunities in the goldfields. However, as more and more of the wheatbelt was being allocated for farming, little thought was given to creating strategic conservation reserves in that region. During the State's centenary year of 1929, the Government published a book in celebration, "A Story of a Hundred Years", with chapters on pertinent topics being written by specialists in those fields. Naturalist and noted wildflower artist, Emily Pelloe, contributed a chapter on the State's flora and made the following plea (Pelloe 1929);

The Eastern Wheat Belt sand-plains, for instance, sole habitat for hundreds of precious species, are fast becoming devastated without reserve in the interests of agriculture. It may be that in 2029, regret will be expressed that so little effort was made as far back as 1929 to ensure the preservation of the rare and beautiful flora. To deny future generations the right to enjoy its wonders is to deserve the censure of the unborn.

That little was done to set aside conservation reserves in the Wheatbelt even after 1929 was regretted by 1979, only fifty years later, as one of the World's most extensive land clearing programs was rapidly effected, rivaling current rainforest clearing in the Amazon basin. However, the extensive forest reserve system declared by 1929 had protected much of the adjoining Darling Botanical District from a similar fate.

The Next 40 Years (1930 - 1969)

Reserve management institutions

In 1933, various separate statutes and regulations dealing with land settlement and administration, including the *Permanent Reserves Act*, had been consolidated into a single *Land Act*. However, the *Parks and Reserves Act* remained separate.

A State Gardens Board had existed since 1920, controlling ten small park and garden reserves in and around the city of Perth. Other reserve management boards existing around 1930 which had also been established under the *Parks and Reserves Act* of 1895 were the Kings Park Board, Rottnest Island Control Board, Nornalup Reserves Board, Pemberton National Parks Board, and outside the Darling Botanical District the Abrolhos Islands Board of Control.

The State Gardens Board was seen by the State Government as an instrument in which to vest a variety of reserves with which nobody else was prepared to be burdened. For example, when the former Greenmount Road Board wished to relinquish its responsibility for the reserves comprising John Forrest National Park, they were vested in the State Gardens Board. The Board also progressively picked up small Darling Range reserves that had become popular weekend excursion and picnic sites, such as Serpentine Falls and along the Canning River in the Araluen area, and in 1947 reserves making up the Walpole - Nornalup National Park (Australian Academy of Science 1962).

It was not until 1956 that the State Gardens Board was transformed into the National Parks Board of Western Australia, still operating under the provisions of the *Parks and Reserves Act*. By this time, the Board also had the enormous Stirling Range National Park (created in 1913) and the Porongorup Range National Park (established in 1925) vested in it. However, while Yanchep "Park" and the large camping reserve at Hamelin Bay near Augusta came under the Board's control, the cave reserves in the Yallingup-Augusta area remained under the management of the State Hotels Department (Australian Academy of Science 1962).

Up to this time very little thought had been given by the State Government to protecting habitat for native fauna. Fauna protection was largely a matter of hunting control over particular species via Game Acts. For many years these had been administered by the Fisheries Department, while "vermin" regulations had been administered by agricultural-based agencies, including the former Rabbit Department, and local vermin boards. A significant change commenced with the passing of the *Native Fauna Protection Act* of 1950. Prior to this, in 1944 a Fauna Advisory Committee had been set up to advise the Minister responsible for administering the *Game Act* of 1912. Members of the Advisory Committee included the Chief Inspector of Fisheries, Curator of the Western Australian Museum, and Dr D L Serventy, then a fisheries research officer with the CSIRO and noted naturalist. Under the new Act, the Fauna Protection Advisory Committee became a corporate body in which wildlife reserves, created via the *Land Act*, could be vested (Australian Academy of Science 1962).

Thus, as Western Australia entered a new development phase stimulated by post-war reconstruction after World War II, there were three principal reserve management bodies seeking to protect forest land, flora and scenic landscape, and wildlife habitat. All were confronted by the competing demand for land for agricultural expansion. The members of the National Parks Board tended to have an interest in flora protection, so that new reserves with a flora emphasis tended to become national parks regardless of their landscape quality. Some so-called "National Parks" reserved in this period more closely fit the criteria of nature reserves. Reserves sought by the Fauna Advisory Committee (later to be renamed the WA Wildlife Authority, and its Act changed to the *Wildlife Conservation Act*) became nature reserves, even though some contained high value landscape.

Expansion of the conservation reserve and forest reserve estates

After 1929, expansion of State forest reservation tailed off in the 'timber belt' of Western Australia's south-west. Up to 1954 only about 100 000 ha more were added and most of this occurred in 1938. As happened in the period following the Great War, after World War II a conflict of interest again arose between demands for unallocated forested land to be released for post-war agricultural development. In 1953, at the suggestion of the Forests Department, an inter-departmental Land Utilisation Committee was set up by Cabinet to recommend on the allocation of remaining uncommitted forest land for forest conservation, water catchment protection, and agricultural development. This replaced a similar committee initially established in 1943 but which had generally been inactive (Forests Department 1969; Christensen 1992).

Largely as a result of the deliberations of the Land Utilisation Committee, up to 1958 a further 200 000 ha were added to State forest reserves in the south-west. Little consideration seems to have been given in this process to separately reserving some of the forest land as specific reserves for nature conservation. At the time (1957), the Forests Department was still producing educational material which explained its intention to convert virgin natural forest to a restructured production forest of rotational [tree] age classes, "ideal" for sustained commercial harvesting (Forests Department, 1966);

Managed and Unmanaged Forests

Possibly the idea of the cultivated forest is not entirely clear. One may ask just what advantages has a managed forest over a virgin forest if the latter is able to provide trees in perpetuity, maintain a stable composition and the soil fertility. It is not always realised that the virgin forest is not the most economical forest from man's point of view. Virgin forests have no normal succession of trees of all ages, but by virtue of their great age, usually contain a majority of over-mature trees. Such trees lose more wood by internal decay each year than they are capable of putting on in their condition of poor vigour. Their large crowns overtop and suppress young trees and prevent germination of seed on the forest floor.

Managed forests, on the other hand, aim to have the opti-

imum number of vigorously growing trees per acre. Once a tree slackens off in increment, it is removed to make way for more vigorous young ones coming on. All age classes of trees are represented in the forest so that as trees are cut for milling, others are available to produce a future final crop with a minimum lapse of time. Spacing between the trees is also controlled to permit an adequate area for growth of each member and the minimum of competition from neighbours. Managed Forests, therefore, are cultivated to produce the maximum amount of desirable produce while guaranteeing that there is always a crop ready to replace the one that is removed for utilisation".

In 1959, the inter-departmental Land Utilisation Committee was superseded by another inter-departmental committee established by Cabinet, the Crown Land Tribunal. Its task was to ascertain use allocation of "sparsely timbered" Crown land and in the ensuing decade the Tribunal's consideration of some 400 000 ha of Crown land resulted in the forest reserve estate being increased by only about 100 000 ha, much of which was coastal plain earmarked for conversion to pine plantation. Thus by 1969, State forests and timber reserves in the South West that were under Forests Department control totalled some 1.8 million ha, with additional extensive forest estate in the Eastern Goldfields (Forests Department 1969; Christensen 1992).

During the same period, relatively little improvement had been made to the conservation estate in the State's forested south-west, in adjoining agricultural regions and Wheatbelt, nor in the State generally. One redeeming feature was the creation in June 1930 of 18 timber reserves (under provisions of the Land Act) to protect mallet groves in the Great Southern area of the wheatbelt at the request of the Forests Department (former Forests Dept. file, now CALM file 011479 F3003 53). These totalled some 130 000 ha, much of which was later converted into nature reserves, such as Lake Magenta and Dragon Rocks Nature Reserves. Nature conservation-oriented groups, like the Royal Australian Ornithologists Union (RAOU) and the Western Australian Naturalists Club, continually lobbied the State Government over the years to retain strategic bushland habitats in areas being opened up for farming. This tended to increase in the 1950s, following the end of World War II, with even the Country Women's Association of WA also making pleas, along with newer conservation groups like the Tree Society and WA Branch of the Society for Growing Australian Plants, now the Wildflower Society of Western Australia (Dept. Lands and Survey File 2507/93, Vol. 4).

On the whole, the coverage of conservation reserves across Australia was poor and not systematic. As a consequence, in 1958 the Australian Academy of Science appointed a Committee on National Parks and Reserves to inquire into the situation. The committee included Dr W D L Ride, then Director of the Western Australian Museum. In turn, the Academy of Science committee itself formed State sub-committees, and the WA Sub-committee on National Parks and Nature Reserves was chaired by Dr Ride, producing a report to the Academy in 1962 on conservation reserve proposals. A very

limited number of copies of the WA Sub-committee report had been produced and, at the instigation of the Royal Society of Western Australia, the National Parks Board collaborated with the Australian Academy of Science and published an edited version (in 1965) for popular use. Now that the Academy of Science sub-committee's proposals for new conservation reserves in the State was publicly available, there was strong community support for their implementation by the State Government Annual Report of WA Dept. Lands & Survey, WA National Parks Board, 1966; (Australian Academy of Science 1962, 1968; Conservation Through Reserves Committee 1974; Ride 1975).

In 1969, the WA Cabinet established another inter-departmental committee, the Reserves Advisory Council, to recommend on the Sub-committee's conservation reserve proposals and other similar proposals from a variety of sources that had been put forward for the establishment of conservation reserves. While a number of the Reserve Advisory Committee's recommendations were adopted by Cabinet, a backlog began to develop over proposals where there was opposition from mining interests. A culmination of this deteriorating situation occurred later in 1969 after the Hamersley Range National Park (now Karijini National Park), proposed by the Academy of Science WA Sub-committee, was created on the recommendation of the Reserves Advisory Council. Reservation of this extensive (630 000 ha) Park apparently by-passed a Mines Department vetting process and received Cabinet approval in the face of a number of iron ore development agreements covering the area. The Reserves Advisory Council then ceased to meet because outstanding recommendations remained unapproved (Annual Reports of WA Dept. Lands and Survey and WA National Parks Board, 1969, 1970; Conservation Through Reserves Committee 1974; Ride 1975).

While the conservation reserve estate in the forested south-west had not substantially increased up to 1969, a number of conservation reserves had been set aside in the northern part of the Darling Botanical District. This occurred as new land for agricultural expansion was being made into sandplain areas, following success with trace-element fertilisers. The allocation of conservation reserves in these more recent times was a reflection of Government response to changing community attitudes. These were outside of the main forest belt and largely comprised sandplain (kwongan) vegetation, and included the Moore River National Park. Elsewhere in the State, the Government Botanist, C A Gardiner, had been successful in persuading the State Government to create a series of large strategic nature reserves along the South West and Eremean Botanical Provinces interface. These comprise today's Kalbarri and Cape Arid National Parks and Jilbadji Nature Reserve, and were gazetted in 1954. Gardiner was also successful in having the Fitzgerald River National Park set aside at the same time, initially as a nature reserve (Australian Academy of Science 1962; Ride 1975).

As the State Government had apparently refused to consider any further significant conservation reserve proposals, this helped stimulate the initiation of a public campaign by the Conservation Council of Western Australia in 1969.

A Modern Reserve System (1970 - 1995)

Environmental Protection Authority and its Conservation Through Reserves Committee

The influence of the "Conservation Campaign" mounted by the infant Conservation Council in 1970 is often overlooked as one of the stimuli to government action in that era. Formed in 1967 by a consortium of the main conservation groups existing in Western Australia at the time (including the Tree Society, Western Australian Naturalists Club, Kings Park and Swan River Society), the Council initially acted as clearing house for information and a means of co-ordinating group activities where there was a common interest. These ranged from opposing inappropriate development plans for Kings Park, opposing mining proposals in numerous conservation areas (such as Jilbadji Nature Reserve) through the Mining Wardens Court, and promoting expansion of the State's conservation reserve system.

Matters came to a head in 1969 when serious industrial pollution was manifesting itself in Cockburn Sound and other coastal areas; with continued mining threats to key conservation reserves, culminating in bauxite mining in State forest and mineral sand pegging in popular resort areas around Geographe Bay to Augusta; and State Government disinclination to consider any more proposals for conservation reserves. At the time, the State Government was also promoting its "million acres a year" farmland release scheme involving virgin bushland in the Wheatbelt.

This stimulated the formation of more groups that were fighting local issues; even established Progress Associations and the Farmers Union were becoming involved in opposing some industrial development and mining proposals. Many more groups became affiliated with the Conservation Council and in 1969 it began planning a campaign. The campaign focused on three basic actions, wide promotion of a Conservation 'Bill of Rights' outlining the Council's view of Government action that was needed, the gathering of a massive petition for presentation to Parliament, and an organised torchlight parade on Parliament after it opened for its last session before the 1971 Parliamentary election (Churchward 1991).

Amongst the 'Bill of Rights' requests were the formation of a Ministry of Conservation, creation of another 8 million ha of conservation reserves in the State, and a reform of mining legislation applicable to conservation areas. Public and media support for the campaign was high and the government of the day responded with an inquiry into the 1904 Mining Act being conducted and the slow but eventual great improvement for the protection of conservation areas, as well as initial environmental protection legislation. However, the legislation was not formally proclaimed prior to the 1971 Parliamentary election and the incoming Tonkin Government initiated stronger legislation and the creation of an Environmental Protection Authority (EPA). In turn, the Authority immediately set in train a project to promote the establishment of a State-wide conservation reserve system. The latter commenced in 1972 and coincided with growing public concern over native forest management as the concept of clear-felling forest areas for an export

woodchip industry was being planned in several States, including Western Australia.

At its first meeting after being established in 1971, the EPA set up a Conservation Through Reserves Committee (CTRC) to examine Western Australia's existing conservation reserve system and to report to the EPA on proposals to significantly expand it. Dr W D L Ride was appointed Chairman. In its work, the CTRC was assisted by a Technical Sub-committee of specialists in the fields of demography, zoology, botany and geology, and by an executive officer. The latter group were seconded from government departments to work full-time on the project (Annual Reports of the WA Environmental Protection Authority, 1972, 1973; Conservation Through Reserves Committee 1974; Ride 1975).

The CTRC divided the State into 12 fairly homogeneous regions, or "Systems", and began producing reports on them for public comment and EPA consideration, the first being released in 1974 and the last in 1981 (the so-called "Green Books"). In turn, the EPA issued its own reports (the so-called "Red Books") with recommendations to the State Government for new reserves and the expansion of some existing ones in the various Systems. Within this project, the Darling Botanical District is basically covered by Systems 1, 2 and 6. In these regions some public land was still available to extend the reserve system but the majority of the uncleared land had already been included in State forest reserves (Ride 1975; Mulcahy 1991; O'Brien 1991; Christensen 1992).

The major new conservation reserves created in the Darling Botanical District through the CTRC process were the adjoining D'Entrecasteaux and Shannon National Parks in System 2. Both were extremely controversial with the former being initiated by local Forests Department staff and vigorously opposed by various land development interests, and the latter being initiated by the CTRC itself and vigorously opposed by the Forests Department and other agencies. However, the Forests Department did support conservation priority management of some parts of the Shannon Basin. The other major controversial CTRC proposal was in System 1, involving the connection of the discontinuous Leeuwin-Naturaliste National Park (based on the original cave reserves once managed by the 'old' Caves Board) through the addition of other miscellaneous reserves and private land purchases. Because of several contentious issues, the EPA arranged for a special inter-departmental committee to review the CTRC proposals within Systems 1 and 2 and its report (the "Brown Book") was considered by the EPA in conjunction with the CTRC proposals before making recommendations to the State Government. While the EPA did not support the original Shannon "Basin" national park proposal, various conservation groups maintained a continuous campaign for the concept and were successful a decade later in having the area excised from State forest and converted into a national park (Department of Conservation and Land Management 1987a; Mulcahy *et al.* 1988; Thomas 1988; O'Brien 1991; Christensen 1992).

Elsewhere in existing State forest areas, the CTRC and EPA basically supported Forests Department plans to have identified high nature conservation and recreation areas retained as forest reserve under Forests Depart-

ment management but with priority for those uses. However, the Conservation Council campaigned for a jarrah forest conservation reserve in the Nanga area near Dwellingup (System 6) to be taken out of State forest and managed separately (Conservation Council 1980; Mulcahy *et al.* 1988; Department of Conservation and Land Management 1990; Christensen 1992). To some extent, this was seen as a means of redressing the loss of the nearby original "South Dandalup" nature reserve in 1911 to forest production interests. The State Government eventually agreed to this proposal as well, and today's Lane Poole Reserve is the result. System 6 as a whole was the most complex of the CTRC regions because it included most of the State's population and fewer opportunities to significantly increase the conservation reserve estate. However, out of a number of the proposals involving the Swan Coastal Plain came the concepts of urban bushland protection and regional park focuses which would later be used to channel community and government efforts to put protective measures in place (Environmental Protection Authority 1983; Mulcahy 1991).

Reviewing national park management

During the 1971-1973 Labor government under Premier John Tonkin, there was significant change in State Government policy toward environmental protection. The *Environmental Protection Act* and the EPA (along with the EPA's 'conservation through reserves' project) became established. Toward the end of its term, the Labor government also examined the operation of the former National Parks Board with a view to improving its structure and management capability. Basically, three options were canvassed;

- transferring national park management to an existing and better resourced Forests Department (the "Queensland model"),
- amalgamating the wildlife management division of the existing Department of Fisheries and Wildlife with the National Parks Board, to provide a National Park and Wildlife Service with an expanded conservation management role (the "NSW model"), and
- converting the existing "Board" into an Authority operating under its own Act with improved funding and staff resources, and a professional Director.

The abysmal national park allocation in Queensland and growing controversy over forest management in Western Australia mitigated against the first option. While there was community support for establishing a National Parks and Wildlife Service similar to the service then recently established in NSW, it was opposed at bureaucratic levels. Key officials associated with the National Parks Board and senior staff in the Department of Fisheries and Wildlife associated with wildlife management argued against an amalgamation. An in-coming conservative coalition government, under Premier Sir Charles Court, subsequently drafted legislation for a new National Parks Authority, which came into being in 1976. While the new Western Australian Government maintained a programme of improved environmental management, controversy continued over its adoption

of the EPA recommendation that the Shannon basin remain reserved as State forest, and there was strong opposition to the proposed D'Entrecasteaux National Park which would "lock up" potential farmland in areas such as the Pingerup Plains.

In 1979 and 1980 the Legislative Council agreed to the appointment of Select Committees to inquire into, and report on national parks in Western Australia. Both were prompted and chaired by the Hon Sandy Lewis MLC, Member for the South West Province. The scope of the 1979 proposal was all-embracing with an impossible two-month deadline for tabling a report. The resultant eight-page report, without conclusions or recommendations, did little justice to the time and effort of the many people who made written submissions or appeared before the Select Committee (Select Committee 1979).

The second attempt was more successful and resulted in a report exceeding 150 pages. However, this time many of the people who participated in the 1979 inquiry didn't participate in the second inquiry. Community participation in the second Select Committee inquiry is also remarkable for the amount of interest shown by local governments and regional development organisations which were pro-land development, and deeply concerned over EPA proposals for expanding the State's conservation reserve system (Select Committee 1981). Very little became of this Parliamentary committee report. However, while the concept of a National Parks and Wildlife Service was supported, so was a nature conservation precinct concept which allowed resource utilisation. It is clear that the idea was based on the English-style "National Park" (where landscape conservation is imposed on utilised rural land), but in reverse where development could be permitted in what started out as fairly pristine land, such as the Pingerup Plains area of the D'Entrecasteaux National Park (personal communication with the Select Committee).

Forest management priority areas

The period 1975 to 1987 was one of great controversy over forest management and forest reserve issues. Close questioning in Parliament by the opposition Member for Warren, the Hon David Evans MLA, had revealed the extent of forest resource over-cutting that had been allowed for some time (WA Parliament, Legislative Assembly questions on notice No. 19 17/10/1974, and No. 67 28/11/1974), while the Forests Department was still promoting the concept of "sustained yield" in its educational material (Forests Department 1971);

A well-managed forest may be likened to a bank account in which the forest itself and the forest soil represent the capital invested and held in trust, while the annual growth in timber (the increment of the forest) represents the interest earned. The fundamental idea of Forest Management is to harvest this increment only, and to preserve and improve the forest capital for increased future production.

It was probably with the State's first woodchip proposal in 1973, from the Forests Department itself, that the full significance dawned on the interested community of the long-term change to forest structure that was proposed. Essentially, the concept of natural forest conversion to "ideal" or so-called "normal" forest involved restructuring to a regular succession of all age classes to

provide regular timber crops of young trees (around 100 years old, with even younger "thinnings") in perpetuity. To do this conversion on a large scale in the mixed karri-marri forest included extensive felling of marri trees to waste, and therefore without recovery of expensive felling costs. However, marketing marri woodchips for export as a feedstock for paper making would make clear-felling and subsequent forest conversion economical (Annual Reports of the Environmental Protection Authority 1973, 1974; Forests Department 1973). While publicity over the past two decades has tended to focus on the concept of extensive clear-felling as a silvicultural practice, this is just a means to an end, being the conversion of a natural forest ecosystem to a manipulated tree crop system, in which the long-term environmental implications still remain unclear.

On top of the Shannon basin and woodchip issues, the Forest Department created another controversy with the proposal to re-forest *Phytophthora*-dieback affected native forest with pines in the Donnybrook Sunklands (Blackwood Plateau), between Nannup and Margaret River. The statement of intent, issued in September 1975, proposed a program to convert some 60 000 ha of jarrah forest, considered to be of poor quality for timber utilisation, to pine plantations over a 30 year period (Forests Department 1975). However, like the Shannon basin issue, the matter was determined by commitments in the State Platform of the Australian Labor Party, and the program was discontinued when the Burke Labor Government came into office in 1983.

Faced with growing community concern and pressure within its own ranks (R Underwood, personal communication), and a realisation also that multiple-use forest management needed to be a significant feature of its operations, the Forests Department embarked upon a system of identifying forest blocks having a variety of appropriate priorities for management (Mulcahy *et al.* 1988; Christensen 1992). Termed management priority areas (MPA), the concept first appeared in General Working Plan number 86 in 1977. It was also promoted in issues of the Department's publicity journal, *Forest Focus* (No. 18, August 1977; No. 22, January 1980) as part of its new zoning policy for forest management. The key MPAs in a conservation sense were those identified as having wildlife or recreation priorities. The MPA concept also generally comprised a core/outer buffer system, and identified MPAs were well established when the CTRC/EPA System 6 study was underway in late 1970s/early 1980s. While the EPA's 1983 recommendations for System 6 (Environmental Protection Authority 1983) supported the MPA concept and that such areas remain under Forests Department management, the Authority also recommended that legislation be provided to make the priority purpose secure and that any change from conservation or recreation require Parliamentary endorsement. It also advocated that management plans for conservation MPAs be prepared and made public as soon as practicable. These proposals were aimed at maintaining security of purpose for forest conservation areas that remained under Forests Department management.

There was still community concern that forest conservation areas identified by the Forests Department were inadequate in extent and would remain insecure in

terms of management while still vested in the Department. Further change was to come within a couple of years after the Forests Department was merged with other agencies following promulgation of the *Conservation and Land Management Act* in 1984.

The Conservation and Land Management Act

One of the first actions of the incoming Burke Government in 1983 was to have land resource management in the State's south-west reviewed, because of continuing controversies over the use of forest and coastal land. The mechanism created for this was the appointment of a Land Resource Management Task Force. In an interim report, the Task Force sought and was granted an extension of its terms of reference to take in the whole of Western Australia. The principal outcome of the final report of the Task Force, in January 1984, was the amalgamation of the Forests Department, National Parks Authority and the wildlife component of the Department of Fisheries and Wildlife to form a new department to manage State forest and timber reserves, national parks and nature reserves, and wildlife generally. At the same time, it advocated that separate advisory bodies for forestry and nature conservation be established to assist the Minister, and that a higher level "Policy Commission" be created above the Department (Task Force 1984).

The structure eventually adopted by the Government was that of an amalgamated department, with three advisory bodies (referred to as 'controlling bodies' in the Act); Lands and Forests Commission (LFC), Timber Production Council (TPC), and National Parks and Nature Conservation Authority (NPNCA).

The concept was strongly opposed by conservation groups generally (as well as local government and other sectors of the community), who would have preferred a simpler amalgamation to form a National Parks and Wildlife Service similar to the NSW model. As a compromise, the Government provided a more pro-active role for both the LFC and NPNCA, with forest and conservation reserves being vested in each, respectively, (rather than in the Department), and that these two "controlling bodies" be responsible for management plan production and monitor the Department's implementation of management plans approved by the Minister, and policy formulation. This structure was put in place in 1985 after the passing of the 1984 *Conservation and Land Management Act*, with the amalgamated department becoming the Department of Conservation and Land Management (CALM). A feature of the new department was a decentralising of administration through the establishment of regional and district offices throughout the State. At the same time, the *Wildlife Conservation Act* was modified to relate to wildlife management generally, and nature reserve provisions were transferred to the *Conservation and Land Management Act*.

In 1987 the former Forests Department's Forest Working Plan No 87 was due to expire. CALM, in conjunction with the LFC and NPNCA, set about replacing it with three separate region management plans into which the main State forest areas fell, - CALM's Northern (now Swan), Central and Southern Forest Regions. Draft region management plans were issued for public comment and extended the forest conservation/recreation MPA system. It also proposed that the purposes of MPAs be

given Parliamentary security through amendment of legislation. However, from within the Labor Party, the Government was persuaded to promote conversion of conservation/recreation MPAs to national parks, conservation parks or nature reserves and have them vested in the NPNCA rather than remain as "zones" within State forest still vested in the LFC (Department of Conservation and Land Management 1987b, 1987c, 1987d; Mulcahy *et al.* 1988; Shea & Underwood 1990; Underwood 1991; Christensen 1992).

The approved 1987 Forest Region Management Plans therefore set in train the transfer of over 500 000 ha from forest reserves to conservation reserves. Subsequent amendments to these three region management plans (Department of Conservation and Land Management 1994) increased this transfer proposal by a further 50 000 ha approximately. The mechanics of the transfers are administratively complex and the proposals are being progressively implemented. Under provisions of the *Conservation and Land Management Act* both the NPNCA and LFC are obliged to monitor the implementation of formal management plans. However, to date (1995) no status report has been publicly released. During the period 1989-1993, the EPA maintained a stance that State forest retained for timber production should also be managed to maintain its wildlife habitat values, and advocated the establishment of forest research and monitoring overview mechanisms. In 1994, the State Government adopted as policy the ecological sustainability of timber production from native forests reserved as State forest (Department of Conservation and Land Management 1994).

Conclusion

In the "design" of conservation reserves, the selection of many of the early reserve sites was a matter of someone's personal fancy but usually focused on an outstanding resource-base. For example, Kings Park (1872) provides panoramic vistas across Perth and Melville Waters; Beedelup and Warren National Parks (1901) contain truly "noble" karri trees, and appealing riparian landscape; the same can be said of John Forrest (1895) and Serpentine National Parks. However, there was more science and "system" to the selection of the former "South Dandalup" nature reserve (1894) and the original cave reserves that formed the nucleus of today's Leeuwin-Naturaliste National Park (1902).

It was another fifty years or so after the initial creation of conservation reserves around the turn of the century, however, before science and "system" were applied to reserve selection in Western Australia. The first were the strategic botanical province interface reserves promoted by Charles Gardiner in the early 1950s, and resulting in today's Kalbarri and Cape Arid National Parks and some other areas. While the Australian Academy of Science began raising community interest in the need for a systematic approach to conservation reserve selection, the eventual result in Western Australia was the EPA's more extensive decade-long 'Conservation Through Reserves' program. Reserve selection in that process was dependent upon constraints such as the availability of uncleared land, other competing utilisation interests (e.g. mineral development) and local

community attitudes. Thus, boundary outcomes were influenced by politics and compromise.

By the time the EPA's Conservation Through Reserves Committee had completed its first major assessment of over two-thirds of the State (Conservation Through Reserves Committee 1974), the Academy of Science had produced a further report, outlining the need to preserve genetic diversity, along with other concepts relating to reserve "design" (Australian Academy of Science 1975). This was supplemented by the "Specht Report" (Specht *et al.* 1974) concerning the conservation of major Australian plant communities. However, while these were able to have some influence on new conservation reserve proposals for Swan Coastal Plain areas in the EPA's subsequent System 6 study, many of the "regional park" proposals were based on landscape/recreation potentials identified through early (1950s/1960s) town planning concepts. Nevertheless, both reports influenced the Forests Department in its selection of conservation MPAs within State forest reserves (Mulcahy *et al.* 1988; Christensen 1992).

Through several processes, the conservation reserve situation within the Darling Botanical District is under review and doubtless will be subjected to further fine-tuning. Currently there is a heavy focus on the concept of 'urban bush' conservation and regional parks, and the situation was adequately summed up by the EPA (1991):

There is much unfinished business in implementation of conservation through reserves. We have done as well as possible for late starters in agricultural areas, we are doing better than before in forest areas, but continue to lag in pastoral areas, and have reached about halfway in implementation in urban and near urban areas.

In 1996 the EPA is scheduled to review aspects of CALM's management of State forest, including forest research and monitoring issues. The content of the Authority's report and its conclusions may indicate if the objectives of multiple-use management are being met satisfactorily or not.

1995 has been taken as the centenary year for Kings Park, as it was 100 years ago that the serious business of management commenced with the appointment of its management board. However, it has taken 100 years for the production of a formal management plan for this Park, effectively the State's first regional park. The story of urban bushland protection and regional park establishment and management is one with a "town" planning focus and of long-term indecision. However, some key decisions appear about to be made by the present State Government on urban bushland policy and regional park administration. Compiling a history on this topic requires branching into the realms of town and strategic planning, and is a story in its own right. It is a task best left for a little while longer, until State Government direction becomes clearer.

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