

Australia's Distinctive National Parks System

by

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INTRODUCTION

Australia possesses a distinctive system of national parks and conservation reserves, in that it is the State and Territory Governments, rather than the Federal Government, which manage the national and other parks. For although there is some involvement by the Federal Government in the management of external territories, this is very small in comparison with the States' overall role. The Federal Government, however, has played a prominent role in Australia's World Heritage Areas, several of which overlay National Parks that are managed by State Governments.

The Federal Government's role is outlined in the Heritage Properties Conservation Act which covers the eight areas nominated so far: Great Barrier Reef, Lord Howe Island Group, Willandra Lakes Region, Kakadu National Park, Western Tasmania Wilderness National Parks, Uluru National Park, Wet Tropics of Queensland, and East Coast Temperate and Subtropical rain-forests of New South Wales. Despite this important role of the Federal Government, however, the State and Territory Governments are still preponderant in planning and managing the national parks system in Australia.

This method of operation has often confused overseas visitors to Australia and has led to some anomalies in the Australian system. The present paper describes this distinctive parks system, its history and the reasons for State control, before comparing it with systems in some other countries, and terminating with a discussion on the future of Australia's parks system. For the sake of simplicity, unless otherwise stated this paper covers terrestrial parks and reserves only; marine parks and reserves, *e.g.* Great Barrier Reef Marine Park, are not discussed. Fig. 1 indicates some of the major cities and National Parks in Australia in 1988.

HISTORY OF NATIONAL PARKS IN AUSTRALIA

The first one-hundred years of national parks in Australia has been summarized by Goldstein (1979 pp. 92-145). On 21 March 1879 'The National Park' (now the Royal National Park) was reserved, in the colony of New South Wales just south of Sydney: 'to ensure a healthy and consequently vigorous and intelligent community... all cities, towns and villages should possess places of public recreation'. The area of 18,000 acres (7,500 ha) was proposed to be dedicated 'for the purposes of a National Park' and intended to be like 'no other park in the world'.

Although Yellowstone (National) Park is recognized as the first national park in the world, declared in 1872

(Runte, 1987 p. 33), it did not officially obtain the title 'national park' until many years later, and it is possible that the (Royal) National Park was the first area in the world to use this title in its declaration.

Other Australian colonies did not hesitate to follow the example of New South Wales (NSW). Victoria declared an area of 597 ha as a public park in 1866, and gave it the title of 'Tower Hill National Park' in 1892. Unfortunately, attempts to beautify the area led to the revocation of the title many years later. The longest continuous reservations as national parks in Victoria are at Wilsons Promontory and Mt Buffalo, both declared in 1898, although an area in the Dandenong Ranges near Melbourne (Ferntree Gully) had been commonly known as 'the National Park' since 1882.

Western Australia reserved 175 ha as Kings Park, Perth, in 1872, and in 1895 the first reserve for the purpose of a national park was established at Swan View (43 ha). In 1900, 1,423 ha was added to this and the park was called John Forrest National Park. South Australia's first national park was an area of 796 ha of parkland at Belair, near Adelaide, which had formerly been a Government farm. This park was declared under a National Park Act in 1891 and called 'The National Park'.

Queensland made a series of attempts at park declaration around the same time, but had to wait until 1908 for the declaration of its first national park — a small area at Witches Falls, Tambourine Mountain. Despite early agitation by field naturalists, Tasmania had to wait until 1916 for the declaration of its first national parks: Mt Field and Freycinet.

The above brief history of the establishment of national parks in Australia demonstrates that there was a great deal of interest in the various colonies late in the nineteenth century, resulting in most states having national parks by the turn of the century.

The turn of the century, and the year AD 1901 in particular, was an important period for national parks in Australia. In 1901 the former colonies mentioned above joined in a federation to form Australia. The Australian Constitution, declared in 1901, is the basis for Australia's State-run national parks system. The Australian Constitution listed the responsibilities that the Federal Government would hold. If a responsibility was not listed in the Constitution, then that responsibility remained with the State (former Colonial) Government. Environmental planning and management were not mentioned in the Constitution, so the management of Crown (Public) Land remained with the States beyond 1901 and through to the current day. These circumstances have led to several anomalies in the overall national parks system in Australia.

Victorian Land Conservation Council, 1988), whilst in others only a very general picture is possible. A series of publications in recent years from the ANPWS (e.g. Hinchley, 1982 pp. 12-36; Mobbs, 1987, 1989 pp. 20-69) have summarized the extent of the parks system; as has the IUCN's *List of National Parks and Protected Areas* (several editions). Table I highlights the growth in national parks in Australia over the past 32 years.

By 1968, all six states possessed a range of national parks but the variation in number and area was substantial. The smallest state (Tasmania), had the largest percentage

of its landmass reserved in national parks (4.2%), but the figure is unreliable as the nomenclature in Tasmania was confused at the time (Ovington, 1980). Notable features in the remaining states were the very small percentage of South Australia and Western Australia in national parks, the enormous number of small national parks in Queensland (254), the majority small islands and cays on the Great Barrier Reef, and the continuing leadership of New South Wales in most aspects of reservation. In the country as a whole, only 0.38% of land-area was reserved in 338 separate national parks.

By 1978 the total area reserved as national parks in the country had more than trebled to 1.27% of land area (469 parks), with Western Australia leading the increase with the addition of over four million hectares to bring its percentage area to 1.8%, just behind New South Wales. In this period New South Wales, Queensland, and Tasmania, all doubled their areas of national parks, and Victoria showed a substantial increase as well. South Australia, with only 0.23% of its area in national parks, was the notable exception to the national trend.

The really substantial increase in area of national parks' reservation in Australia, however, occurred in the period 1978-90. In some respects this reflected, not necessarily a heightened awareness of Nature conservation in this decade, but the substantial lag in having recommended national parks added officially after legislation. This was certainly the case in Victoria (VLCC, 1988), where many of the legislative additions were made in the late seventies and early 'eighties, even though the parks had been recommended in the mid-to late-seventies.

For Australia as a whole, there was a doubling in area of national parks in this period (1978-90) to 2.6% of the area of the country. The number of national parks increased by 57 (a factor of 12%), and showed a trend towards increase in the added parks' areas rather than number only. Between 1968 and 1990 the area of land reserved in national parks had increased eight-fold — actually at an average of over 750,000 ha per year. The increases from 1978-90, though, were not uniform across the States. New South Wales, a leading State in the 1968-78 period, again almost doubled its area of national parks between 1978 and 1990, but now trailed substantially behind Victoria (3.9% versus 10.0%, respectively) in the percentage of total land-area reserved. Between 1978 and 1990, Victoria increased its national park reservations almost nine-fold, and fifteen-fold between 1968 and 1990. Interestingly, Victoria achieved this result during 1968-90 with only a 50% increase in the number of parks, emphasizing the tendency towards consolidation of larger parcels of land than formerly into national parks.

A major increase in area of land reservation occurred in South Australia (thirteen-fold between 1978 and 1990), whilst Western Australia increased its number of national parks by 40% but the area reserved by only 6% in the same period.

AUSTRALIA'S PRESENT PARKS SYSTEM

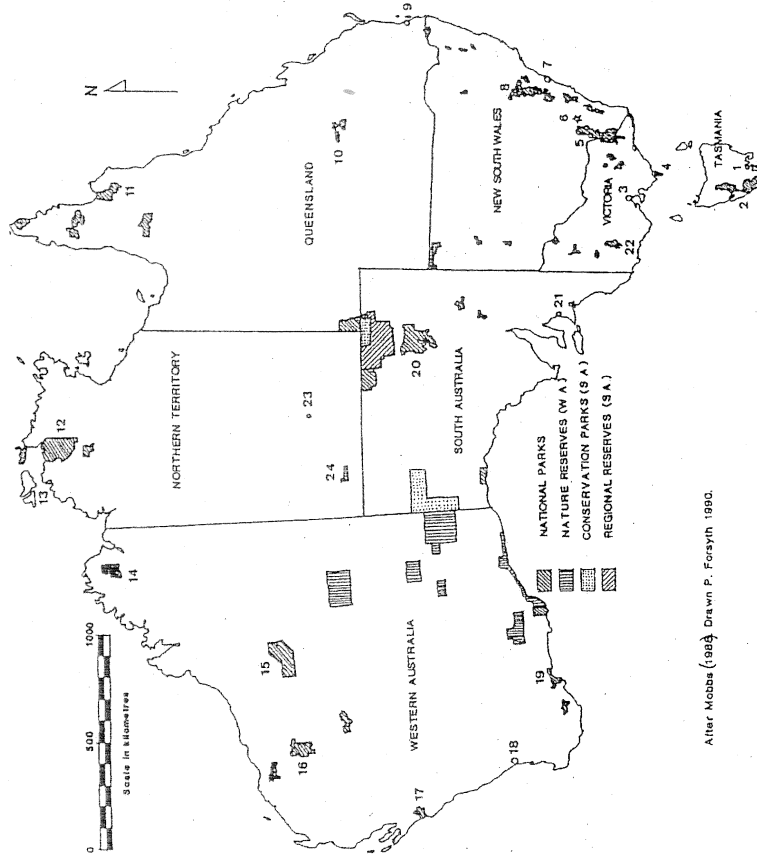
In 1990, Australia possessed a system of national parks and conservation reserves that was managed by the Federal and various State and Territory Governments. A degree of uniformity had been given to this system by the Nature conservation Ministers of all of these governments

TABLE I
Growth in National Parks in Australia, 1968 to 1990.

STATE OR TERRITORY	YEAR		Proportional increase in total area, 1968-90
	1968	1990	
Australian Capital Territory	No. 0 Area 0 % reserved 0	0 0 0.094 39.1	—
Northern Territory	No. 4 Area 0.19 % reserved 0.14	12 0.25 0.19	5 0.18 0.13
New South Wales	No. 19 Area 0.80 % reserved 1.0	46 3.14 2.1	68 3.9 3.92
Queensland	No. 254 Area 0.90 % reserved 0.54	323 2.18 1.26	336 3.63 2.1
South Australia	No. 6 Area 0.21 % reserved 0.2	8 0.23 0.23	12 3.02 3.1
Tasmania	No. (2) Area 0.29 % reserved 4.2	12 0.65 9.6	14 0.88 12.8
Victoria	No. 20 Area 0.15 % reserved 0.7	26 0.26 1.14	31 2.28 10.0
Western Australia	No. 35 Area 0.33 % reserved 0.13	42 4.56 1.8	59 4.83 1.9
Total for Australia	No. 338 Area 2.9 % reserved 0.38	469 9.8 1.27	526* (3) 20.1 2.6

NOTES:
(1) Some parks were transferred to the Federal Government.
(2) The nomenclature of some parks was confused in 1968.
(3) This figure differs from the total given in Table II because the four national parks added in 1978-90 were not listed in Table I.
(4) 1968 and 1978 data are from Ovington (1980).
(5) 1990 data are from Table II of this paper.
(6) All data are for June 30 of the year stated except for the 1968 figures for the Northern Territory and Western Australia which are for December 1968.
(7) All areas are x 10⁶ hectares.

* A Referee comments (in *littera*) that 'only 250 of these are recognized as meeting all international standards for NPs and are thus included in the 1990 UN list (published by IUCN) as National Parks'. — Ed.



After Mobbs (1984) Drawn by P. Forsyth 1989.

FIG. 1.
Some of the Major Cities and National Parks (NPs) in Australia in 1988. Key to numbered areas:

1. Hobart
2. South-west Tasmania World Heritage Area
3. Melbourne
4. Wilsons Promontory N P
5. Kosciuszko N P
6. Canberra
7. Sydney
8. Brisbane
9. Wollemi N P (and others)
10. Carnarvon N P
11. Lakefield N P
12. Kakadu N P
13. Darwin
14. Bungle Bungle N P
15. Roodall River N P
16. Hammerley Range N P
17. Kalbarri N P
18. Perth
19. Cape Le Grand N P
20. Lake Eyre N P
21. Adelaide
22. Otway Ranges
23. Uluru N P
24. Uluru N P

To confuse the system further, Australia has also several 'territories' with varying degrees of self-government — for example, the Northern Territory and the Australian Capital Territory. The parks system in these territories was run completely by the Federal Government (by the Australian National Parks and Wildlife Service, or ANPWS) until recently, with the Australian Capital Territory now running its own system and the Northern Territory having some parks run by ANPWS (e.g. Kakadu and Uluru National Parks) and others by the Territory's own

service (the Conservation Commission). The ANPWS also represents Australia at overseas conferences and delegations. EXPANSION OF NATIONAL PARKS IN AUSTRALIA (1968-90) Before describing the current extent of the Australian parks and reserves system, a brief look at the rate of expansion of the system is warranted. This expansion has been well-documented in some states (e.g. Victoria, see

meeting regularly as the Council of Nature Conservation Ministers (CONCOM). CONCOM had used the IUCN (now renamed World Conservation Union) definition of a national park as a basis for an Australian definition of a national park. This is now used as a guide by all States and Territories. This definition states (McMichael, 1980):

'A national park is a relatively large area set aside for its features of predominantly unspoiled natural landscape, flora and fauna, permanently dedicated for public enjoyment, education, and inspiration, and protected from all interference other than essential management practices, so that its natural attributes are preserved'.

The States and Territories do not *have* to abide by this definition. Some States, *e.g.* Victoria, have a much stricter definition (National Parks Act, 1975) which clearly emphasizes Nature conservation above recreation, whilst others focus more on recreational aspects (*e.g.* Western Australia) or choose to ignore some aspects of the defi-

nition, *e.g.* 'relatively large' in Queensland's case and 'protected from all interference' in Western Australia's case, though even mining is permitted in some areas in the latter State.

There are many other categories that are included in this paper under the grouping of 'other parks and reserves', meaning non-national park areas. These reserves vary enormously from State to State but include in most cases a second-tier classification of state-significant areas that are variously entitled — for example State Parks (Victoria), Conservation Areas (South Australia), and Environment Parks (Queensland). The complexity of categories in this 'other parks' grouping is well beyond the scope of this present, largely introductory, paper. Mobbs (1989) summarizes and lists these reserves, the agencies concerned, and their location, briefly describing the legislation and administration of the reserves in 1988. His work was used as a starting-point for the preparation of Table II,

TABLE II
Australian Statistics on National Parks and Conservation Reserves for 1990.

PARAMETER	STATE OR TERRITORY (1)									
	ANPWS	ACT	NT	NSW	QLD	SA	TAS.	VIC.	WA	TOTAL
State/Territory Area (2)	—	0.24	134.62 (5)	80.16	172.72	98.40	6.79	22.76	252.55	768.24
State/Territory Population (3)	—	0.261	0.157	5.570	2.649	1.388	0.448	4.183	1.477	15
No. of National Parks	4	1	5	68	336	12	14	31	59	530
Area of National Parks (2)	2.117	0.094	0.179	3.145	3.627	3.021	0.881	2.283	4.835	20.18
Areal % in National Parks	—	39.1	0.13	3.92	2.1	3.1	12.8	10.0	1.9	2.6
Total No. of Parks/ Reserves (4)	11	6	52	305	520	239	179	112	1602	3026
Total Area of Parks/ Reserves (2)	4.297	0.112	0.486	3.811	3.678	16.65	13.935	2.778	15.82	48.567
Areal % in all Parks	—	46.6	0.36	4.75	2.12	16.9	13.8	12.2	6.3	6.3
Total No. of Staff (National Parks)	95	18	161	(6)	(6)	(6)	174	(6)	150	598
Total No. of Staff (all Parks)	168	93	265	912	464	281	213	239	170	2,805
No. of Rangers (National Parks)	42	8	26	(6)	(6)	(6)	61	(6)	92	303
No. of Rangers (all Parks)	42	30	130	200	295	94	79	204	92	1,092
Total Annual Expenditure in Aus. Dollars on National Parks (3)	12.5	2	1.5	(6)	(6)	(6)	(6)	33.1	10.7	59.8
Total Annual Expenditure in Aus. Dollars on all Parks (3)	12.6	5	8.5	57.67	26.7	14	15.6	33.1	14.3	187.5
Visitation of National Parks (3)	1.3	0.11	1.0	(6)	(6)	(6)	(6)	(6)	(6)	2.4
Visitation of All Parks (3)	1.3	2.5	2.5	17.5	6.57	2.0	N.A.	8.8	N.A.	41.2

N A = not available

NOTES:

- (1) Abbreviations for names of States and Territories are given immediately below and in the text (p. 335–6). ANPWS = Australian National Parks and Wildlife Service.
- (2) In millions of hectares.
- (3) All $\times 10^6$.
- (4) A list of what is included in each State under 'all parks' is available from the Author on request along with specific details of what States include in the various parameters.
- (5) Two national parks and one conservation zone in the Northern Territory are managed by the ANPWS and are included in their total.
- (6) These States do not differentiate staffing or resourcing or visitation figures for national parks and all parks.
- (7) All non-financial figures quoted are for 1990 whilst budget figures were allocations for the 1989–90 financial year. (Sources respective government agencies.)

which is a comprehensive overview of Australia's parks system as of 30 June 1990. Mobbs's (1989) attempt was updated from Annual Reports (when available) and then checked and added to by way of questionnaires sent by the present Author, between March and June 1990, to all terrestrial management agencies in Australia. The data shown in Table II are correct as of June 1990 unless otherwise stated.

The data in Table II are presented for 'National Parks', and follow the one classification in universal use in Australia, as defined by CONCOM, and for 'All Parks and Reserves'. Specific details of the parks and reserves listed in this latter category are available from the present Author. In many of the States, not all non-national park conservation reserves are listed as 'other parks'. Several reserves that are not managed by the prime Nature conservation agency from which data were collected for Table II, had not been included by that agency. Hence data under 'All Parks and Reserves' should be regarded as an underestimation of the total extent of reservations for conservation in Australia.

Unfortunately, many agencies do not separate parks and reserves' management functions from wildlife management functions, or national park from non-national park management functions, in terms of budget and human resources. Hence figures are not always directly comparable. Nevertheless Table II is as comprehensive a survey of the current Australian system of national parks and conservation reserves as is possible.

Before discussing some of the specific features of the data, a comment on the structure and nature of the major agencies may prove illuminating. Seven of the agencies (those in the ACT, Federally, NSW, Northern Territory, Queensland, South Australia, and Tasmania) are agencies in which all planning and management functions of the park programmes are delivered by the one agency. This is achieved most often by a subdivision (the exception being Tasmania) within a Government Department. In all of these agencies, park management is one aspect of their duties — shared most commonly with wildlife management (including hunting).

In the case of Victoria and Western Australia, a distinctly different approach operates. In Victoria there is a head office division for national parks (and other public land) which controls planning and policy matters, including budget determination, and a Regional Program Delivery agency shared with all public-land managers which manages the parks and reserves from day by day. This model is shared by Western Australia, where the functions of the head office agency have been reduced even further.

The differences in the bases of data in Table II reflect differences in approach between the various states and territories. The Australian National Parks and Wildlife Service (ANPWS) is the agency that is most familiar to overseas park professionals but is virtually unknown to Australians. Although it represents Australia at overseas conferences, it has few parks to manage within Australia. Thus ANPWS manages parks in territories and protectorates other than the Northern Territory and the Australian Capital Territory, with the notable exception of being nominally in charge of two of Australia's highest-profile National Parks: Uluru (Ayers Rock) and the Olgas and Kakadu, both in the Northern Territory.

than 1,000 ha), though six are more than 100,000 ha each. These figures are comparable with those of Victoria, which has less than one-third NSW's land-area. The expenditure on these parks appears to be considerable, although the number of rangers is quite low.

Queensland (QLD) is Australia's second-largest state and has a very distinctive park system. In this state the managing agency, the Queensland National Parks and Wildlife Service (QNPS), is a division within the Department of Environment and Heritage. The most obvious characteristic of the Queensland park system is the enormous number of individual national parks (336). This is a function of two factors — the naming as separate parks of over 200 islands and coral cays, and the tendency to use the national park designation to describe often very small areas that are reserved for Nature conservation purposes. This tendency is highlighted when it is seen that, despite having 336 national parks, the percentage of land-area covered is only 2.1% of the State's total. Mobbs (1989) shows that 224 of those national parks are less than 1,000 ha in area each, and include 114 which are islands and 37 which are small mountain-tops. The figures for rangers in all parks and reserves are composed of 221 rangers who are directly attached to parks and a further 74 attached to districts. The total budget in this case is for the conservation management programme and hence includes more than simply park management expenses. The annual visitation figures are composed of an estimated six million day visitors to all parks and a known 571,000 camper-nights spent in 1990 in national parks.*

South Australia (SA), in contrast to Queensland, has only 12 national parks but these cover a greater percentage (3.1%) of the total land area than do those in Queensland. South Australia has opted for a few large national parks, and then used its other categories of conservation parks, game reserves, recreation parks, and regional reserves (227 in all), to complement these areas and bring the total area reserved up to a very substantial 16.9%. The smallest national park is Mount Remarkable (8,649 ha), the largest being Lake Eyre (1,228,000 ha), while eight other parks are over 300,000 ha each in size, most of these being in arid country. The whole park and wildlife system, though, possess very few rangers, there being little expenditure on management and a low visitation-rate. The estimate of visitation rates for South Australia is approximate and the figures for work-force and expenditure do not separate out wildlife management costs (except for the figures on rangers). The combined agency is the South Australian National Parks and Wildlife Service.

Tasmania (TAS) is Australia's smallest state but possesses 14 national parks covering 12.8% of its land-area. In addition there are 165 other parks and reserves — including Nature reserves, historical sites, game reserves, conservation areas, and aboriginal sites, covering a further 1.0% of the State. The staffing figures include park staff, all members of the Land Management Division's

Resource Section, and the planning team for the World Heritage Area in south-west Tasmania. The figures for rangers in national parks are precise, as they exclude rangers in sub-district headquarters and those concerned with wildlife management only. The expenditure figures include all park allocations, and are composed of a consolidated fund appropriation of \$A8.5 millions and a World Heritage contribution from Commonwealth and the State Governments of \$A7.1 millions. Visitation figures were being prepared as this paper went to press.

Victoria (VIC) is Australia's most densely-populated State, with the second-largest population in the second-smallest area. Yet Victoria has 31 national parks covering more than 10% of its total area, with a further 2.2% consisting of areas reserved under classifications such as wilderness, State, coastal, and regional, parks. These figures do not include a whole series of other classifications — such as wildlife, game, flora and fauna, or bushland, reserves — which are reserved under Acts other than the Victoria National Parks Act of 1975. Victoria has the most comprehensive national parks and reserves system in Australia, with over 80% of its recognized plant communities represented in reserves.

Despite its small size, Victoria has five national parks extending over 100,000 ha each, and only three of less than 1,000 ha. The administration and supplying of these parks, however, appears to be trailing behind their establishment, given the substantial visitation-rate shown in Table II. The total staffing figures do not differentiate between types of parks, and include rangers plus head-office park staff but exclude regional office staff. In addition, not all the time of the 204 rangers quoted is spent inside the parks themselves. The total expenditure for 1989–90 under the parks programme was \$A33.1 millions, but this included a 'once off' purchase of a property for \$8.83 millions and hence a more accurate figure would probably be \$A24.3 millions. The visitation rates are for all of the parks indicated.

Western Australia (WA) is Australia's largest State, with almost five million hectares reserved in national parks (1.9% of the area of the State). Surprisingly, eight of the 59 national parks are below 1,000 ha in size and a further 24 are under 5,000 ha each (Mobbs, 1989), i.e. over half the parks are less than 5,000 ha in area. The parks are each more than 200,000 ha in area. The 'resourcing' of the entire system is, however, very low even by Australian standards. The State has more than 1,600 reserves, in all (including timber reserves) covering 6.3% of its area, and a totally integrated Crown (public) land management agency which makes most of the figures quoted in the table overestimates as far as parks and reserves are concerned; e.g. the 170 staff quoted include all planning-branch and regional operational staff as well as rangers. Unfortunately there are no figures, or even estimates, of visitation rates.

Attempted Comparisons Between States etc.

In comparing the various States and Territories, it needs to be stated that the non-national park figures are not directly comparable. Under their 'all parks and reserves' headings, some States have included every type of

* A Referee asks us to 'Note that the policy of the new Queensland Government is to double the size of their parks system over the next 3 years. — Ed.

* A Referee comments that 'Recent legislation has resulted in additions which [will] bring this total up to 20%'. — Ed.

Among the non-national park areas under ANPWS's care are national Nature reserves (3 terrestrial and 1 marine), a marine park, and a 'conservation zone'. The ANPWS has a significant number of staff and a significant expenditure, but these include staff and expenditure concerned with wildlife issues and those handling international relations as well. The rangers listed in Table II are essentially based in the national parks, and visitor numbers can only be estimated because of the remote nature of many of the parks and reserves concerned.

Details of States and Territories

The Australian Capital Territory (ACT) is now self-governing and hence has taken control of its own parks under the ACT Parks and Conservation Service (ACTPCS). The one national park under the Service's control is Namadgi, which is the northernmost park in the string of national parks that stretch southwards from near Canberra through New South Wales well into Victoria. The ACTPCS in practice manages the whole array of parks and forests in the ACT, but only parks that are Nature conservation-oriented are included in Table II (Nature reserves, Nature parks, and river corridors). The expenditure and staff figures are approximate, as they have been extracted from the total Service. As the ACT is a 'planned' city, i.e. it was created specifically to function as the Australian capital and is quite small, the percentage area reserved for parks is very high indeed (39.1% in national parks). This system and that run by the other territorial government (Northern Territory) demonstrated how recently-formed park services, that were based originally on a Federal system, have continued to be very well resource-based.

New South Wales (NSW) has had a strong National Park and Wildlife Service (NPWS) for many years, although in recent times it faced a crisis over a severe budget over-run.* NSW has the second-largest number of national parks in the country, covering almost 4% of the total area of the State, and a very large number (237) of other parks and reserves — including Nature reserves, recreation areas, historical sites, and aboriginal areas. These figures do not include forest reserves, coastal wetlands, littoral rain-forest, or urban bushland reservations. The New South Wales NPWS is by far the biggest park agency in Australia, although this may be a little misleading because the service also manages wildlife. This is revealed when it is seen that only 200 of its 912 staff are actually rangers in the parks. The NPWS budget is very substantial (\$A57 millions), but the same qualification which applied to staffing needs to be considered. As would be expected for Australia's most populated state with an extensive park system, the visitation rate is by far the highest in the country.

New South Wales was the leader in park management in Australia (cf. Table I) for most of this century, but Table II suggests that this is no longer the case. There are a large number of national parks for a medium-sized state, with almost half (21) of them less than 5,000 ha (four are less

* A Referee comments: 'It is debatable if this was the real reason for the "crisis"'. — Ed.

conservation reserve (e.g. wildlife, game, bushland, flora reserves, and even timber reserves in Western Australia) whilst other States have only included the second tier of actual conservation parks (e.g. Victoria). Despite these qualifications, some interesting comparisons can still be made.

In terms of number and size of national parks, the States and Territories vary significantly. South Australia has an average of over one-quarter of a million hectares per national park, whereas Tasmania, Victoria, and Western Australia, share an average size of between 63,000 and 82,000 ha. This is an impressive average for the small states of Tasmania and Victoria, but is not so impressive for Western Australia when one considers the overall size and percentage area of reservations in that last-named State. The Northern Territory (NT) and New South Wales have a much smaller average size of national park, although the former's figure does not include the two large parks of Uluru and Kakadu (see above). Queensland has by far the lowest average size of national park (10,795 ha), despite its being the second-largest State.

In terms of total area of national parks, the order tends to reflect simply the size of the state, and hence the percentage of the state which is so reserved is probably a better indicator than actual area. The two smallest states (Tasmania and Victoria) have the largest percentage of total area reserved, and one might be tempted to see this as a function of small size; but they also have a very high average park size, and a very much larger percentage so reserved than have other states.

New South Wales and South Australia are of roughly comparable size and have a similar percentage of land in national parks. But they vary considerably in the number of national parks (68 and 12, respectively), whilst Queensland and Western Australia trail significantly behind in percentage of area reserved.

Turning to the total percentage of land in all parks and reserves, the most noticeable feature is that South Australia, Western Australia and, to a lesser extent, Northern Territory, have very significantly greater areas in the 'other parks' categories relative to their national parks. In fact South Australia, with a number of massive arid parks, has, at 16.65%, the greatest reservation in parks of any state, followed closely by Victoria and Tasmania. There appears to be a tendency here in the larger states to have very large areas reserved in categories other than national parks, whilst the smaller states include their largest areas in the national parks category.

Considering the 'resourcing' of the respective park systems, unfortunately the figures are too incomplete to make comparisons for national parks alone. In the case of 'all parks and reserves', all States do give figures but the totals are compiled so differently by different ones that conclusions are very difficult to come to. New South Wales is clearly very well staffed, but its figure for this includes wildlife staff and seasonal rangers. Given Queensland's area of parks, there is again a substantial work-force, but this includes as well all people in the division concerned with wildlife. Western Australia is clearly low in staff, but their distinctive regionalized management system underestimates the numbers of staff involved.

Concentrating on the number of rangers instead, if one calculates the area of all managed parks and reserves per ranger, the States and Territories become segregated into three groupings. Australian Capital Territory and Northern Territory have park areas of approximately 3,700 ha per ranger employed, whilst Victoria, Tasmania, Queensland, and NSW (the eastern states) have between 11,800 and 19,055 ha of park area per ranger. The arid states (South Australia and Western Australia) have very few rangers at all. The systems run by Territory rather than State Governments (the most recently-created systems) have the most beneficial area-to-ranger ratios.

If the number of Australian dollars spent overall per hectare is used as an indicator for all parks and reserves, then the ACT comes out very favourably (c. \$45 per ha), with NSW, NT and Tasmania, spending \$16 per ha, Victoria approximately \$12 per ha (\$8.75 if the total expenditure figure is taken as \$24.3 millions), Queensland spending \$7.25 per ha, South Australia \$0.81 per ha, and Western Australia less than one cent per ha.

In conclusion, in 1990 Australia possessed 530 national parks with all but four planned and managed by State or Territory Governments. These national parks cover 2.6% of the total land-area of Australia — a massive 20.18 million hectares. Other data on these national parks are confused by different collection-methods and definitions, but a general overview of the total park and reserve system is nevertheless possible. There are at least 3,026 parks of all kinds, covering 6.3% of Australia, totalling more than 48.5 million hectares. These parks are visited by well over 40 million people per year.

This overall system cost approximately A\$187 millions (\$US150 millions, approximately) to run in 1989–90 by over 2,800 staff including 1,092 rangers. Mobbs's (1989) equivalent figures for all Nature conservation reserves in Australia were 40.78 millions hectares covering 5.3% of the country as of 31 December 1988. The difference is due to several states excluding wildlife, game, and smaller, reserves from their figures, and the 18 months that elapsed between the two surveys. Mobbs's (1989) figures showed an increase from 4.9% in percentage reservation and 34.53 million ha in area from 31 December 1986 (cf. Mobbs, 1987).

The major conclusion from Table II is that there are great variations in the type of national park and other park systems run in each State and Territory, as well as very substantial differences in the 'resourcing' of the various systems. In isolation the total figures for Australia appear quite impressive. To discover whether the State/Territory-run system in Australia is distinctive, a comparison — in so far as it is possible — with similar countries is worth-while.

COMPARISON BETWEEN THE AUSTRALIAN NATIONAL PARKS SYSTEM AND THOSE OF SIMILAR COUNTRIES

Australia is culturally similar to the United States of America and Canada, and shares with those countries a very similar span of history of national parks, comparable land-areas, and similar federated systems. Canada and Australia also share a similar population density, although the USA is far more densely populated than either. Therefore it is illuminating to compare the national parks systems of the three countries (Table III).

TABLE III

A Comparison Between National Parks Statistics for Australia, Canada, and the United States of America.

(Though comparisons are difficult if Canada's Provincial Parks Systems and the USA's State Parks Systems are not included).

PARAMETER	COUNTRY		
	AUSTRALIA (1)	CANADA (2)	USA (3)
Area of Country (x 10 ⁶ ha)	768	997	916
Population (x 10 ⁶ , approx.)	15	26 (5)	226 (6)
No. of National Parks	530	34	50
Area of National Parks (x 10 ⁶ ha)	20.18	18.23	21.15
Percentage of Country in National Parks	2.6	1.82	2.3
Annual Expenditure (US \$) (4)	46.7-146 (7)	297 (8)	1,027
Visitation Rate (Visitor Days)	2.6-41.2 (9)	20.8 (26.3) (10)	56.42 (282) (10)
No. of Staff	598-2,805 (11)	5,925 (12)	15,147 (13)

NOTES:

- (1) Source: Table II [1990].
- (2) 1987-88 data from Canadian Park Service (pers. comm.)
- (3) National Park Service Annual Report and Statistics, Summary 1988.
- (4) Australian and Canadian dollars converted at May 1991 market rate.
- (5) Estimate for 1985. (Source: respective government park agency statistics.)
- (6) Estimate for 1988. (Source: ditto.)
- (7) First figure is for national parks in four states only (others do not separate figure from expenditure on all parks) whilst the second figure is for all parks in all States and Territories.
- (8) Includes all parks in the Federal system.
- (9) First figure is for national parks in three states only whilst second figure is for all parks in all States and Territories.
- (10) Figure in brackets is for all parks in the Federal System.
- (11) First figure is for national parks only in five States, the second figure is for all parks in all States.
- (12) Includes all permanent staff only.
- (13) Includes permanent staff and seasonal equivalent staff but not volunteers.

There are major differences between the above three countries' systems of national park management. The USA and Canada's national parks systems are each federally funded and managed by one agency. As this article has shown, Australia's is predominantly run by State Governments. One consequence of this to note (Table III) is that, whilst the number of national parks and their areas can be compared (all systems meet reasonably closely the IUCN definition of a national park), budgets, human resources, visitation rates, and 'all parks and reserves' data, cannot. In the case of budgets, human resources, and visitation rates, this is because most of the Australian agencies do not differentiate between the figures for national parks and 'all parks and reserves', while in the non-national park data for Canada and the USA the figures

do not include province/state managed areas at all. Nevertheless, some interesting comments can still be made on the Australian system from Table III.

The most glaring feature is that, although the percentage of land reserved in national parks in each country is quite similar, Australia has more than ten times the number of national parks as compared with the other countries. It would appear that a consequence of the Australian State-run system has been a plethora of smaller national parks.

The expenditure and staff figures are difficult to compare for the reasons stated above, but despite this it is clear that Australia spends less than Canada and far less than the USA on its national park and reserve system, and employs far fewer staff than both those countries. This becomes even more apparent when one considers that the Australian expenditure (shown in Table III) is for all parks and reserves, whereas the Canadian and USA figures are only for national parks. It would be possible to make some explanation for this in terms of arid areas, lower population-density, smaller visitation-rates, etc., for Australia, but none of these factors can account for the huge discrepancies highlighted in Table III. (In practice, Canada could be said to be in a comparable position with its extensive areas of Arctic wilderness and similar population-density.)

In conclusion, Australia has far more national parks, covering roughly the same area (in percentage terms), than the USA and Canada, but expends considerably less on the management of its parks than do those countries.

Australia's system of national parks and conservation reserves is distinctive in that it is run by State/Territory governments rather than a Federal government, due to the peculiarities of the 1901 Australian Constitution. The differences in funding levels, and the proliferation of national parks, probably emanate from this fact. The overall number of national parks is similar across most states, with the exception of South Australia and Queensland. Queensland stands out with more than 60% of all national parks in Australia — in number, but contributing less than 20% in area.

There appears to be a tendency for the different States to run a parks and reserves system in Australia as if they were separate countries, rather than members of the same country. The reasons for this are largely historical, arising from the constitutional allocation of the management of public land to States rather than the Federal Government. Interstate political rivalry may also play a role, as individual States have attempted to demonstrate a better-than-others' environmental record by claiming a greater number of national parks.

IMPLICATIONS FOR THE FUTURE OF AUSTRALIA'S NATIONAL PARKS SYSTEM

Two glaring features of Australia's parks system have been highlighted in this paper:

- 1) Despite being very comprehensive in total area, it is broken up into a large number of national parks; and
- 2) The national parks system is grossly under-resourced if judged by international standards.

Both of these points can be attributed to the same historical cause — that State/Territory Governments

manage the national and other parks rather than the Federal Government. The large number of parks reflects the individual States' desires to have more national parks than other States, *i.e.* for reasons of interstate rivalry. As well, each State may try to acquire its own comprehensive systems which may lead *inter alia* to duplication of reservations for similar plant communities, *e.g.* across borders.

The low 'resourcing' is probably related to the fact that the Federal Government possesses the vast majority of taxation powers in Australia, and then reallocates these funds to constantly under-funded States. Consequently the very few federally-funded parks have higher 'resourcing' than the State-funded parks, while the parks systems run by recently-formed Territory Governments are better 'resourced' than the old State-run systems. The solution to both these dilemmas appears obvious: that the Australian Federal Government should take over the funding, at least, of Australia's national parks system.

The then Prime Minister (R.J. Hawke) stated in 1989 that the Federal Government would consider playing a greater role in the future in environmental management (Hawke, 1989). There is clear precedence for this Federal role in the responsibility already taken by this Government for World Heritage Areas in Australia in recent years under the Heritage Properties Conservation Act. The national park system would appear to be an excellent place to extend this precedence.

Nevertheless there are serious barriers to this desirable course of action. If the Federal Government were actually to take over the whole national parks system, a change in the Australian Constitution would be required. This can only be done by a full referendum, in which not only a majority of votes but also a majority of voters in a majority of States would have to vote in favour of the change. This has occurred on only two occasions during the twenty referenda so far held in Australia's history as a nation.

Although a campaign for Australia's national parks to be run by the national government might have some chance of success, the transfer of all public land to the Federal Government would seem very unlikely in the next decade. Without such transfer of non-national-park public land, the Federal Government would be left with a 'frozen' set of national parks with no opportunity for expansion or rationalization, as it would have no access to further land. In states such as Queensland and Western Australia, this would severely affect chances of improving the parks system.

An alternative approach may be possible, building on the proposals put forward at a conference on an ecological reserve system for Australia which was held in 1975 (Fenner, 1975 pp. 11-39, 103-8). Possibly the Federal Government could finance directly, through State Governments, the national parks and reserves system of Australia without necessarily transferring the State land to the Federal Government. In effect the Federal Government would then offer greater tied and directed funding to the States' parks agencies to run their systems in return for the States allowing the Federal overseeing agency to rationalize the system nominally under its control. If this course of action were taken, the already substantial, comprehensive, and distinctive, Australian national parks system would be improved even further through better 'resourcing'.

Finally, one feature also needs to be addressed: the definition of the word 'national' in the title 'national park' in Australia. In most countries the word 'national' refers either to the park being run by the national government or to the national significance of the park. In Australia 'national' certainly does not refer to the level of government managing the area, and even under the recommended revised system this would not be the case. It would appear that State Governments intend the title 'national' to be used to describe areas of *national significance*. If this is true, then CONCOM should immediately incorporate this aspect into its definition of a national park.

I believe that the combined effect of adopting these recommendations would be the establishment of a first-class national parks system for Australia.

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SUMMARY

Australia possesses a distinctive national parks and conservation reserves system, in which it is the State Governments rather than the Federal Government which owns, plans, and manages, national parks and other conservation reserves.

Most Australian States declared their first national parks in the latter quarter of last century, Australia's first national park being declared in New South Wales in March 1879. These critical declarations were followed by a slow accumulation of parks and reserves through to 1968. The pace of acquisition then quickened dramatically with an eight-fold expansion in the total area of national parks between 1968 and 1990, at an average rate of over 750,000 ha per annum. The present Australian system contains 530 national parks covering 20.18 million hectares or 2.6% of the land-mass. A further 28.3 million hectares is protected in other parks and conservation reserves. In terms of the percentage of their land-mass now in national parks, the leading States are Tasmania (12.8%) and Victoria (10.0%), with Western Australia (1.9%) and Queensland (2.1%) trailing far behind, and New South Wales (3.92%) and South Australia (3.1%) lying between.

The Australian system is also compared with the Canadian and USA systems. All three are countries of widely comparable cultures that have national parks covering similar percentage areas, but Canada and the USA have far fewer national parks than Australia and they are in general of much greater size. In addition, Canada and the USA 'resource' these parks far better than the Australians do theirs. The paper concludes that Australia needs to rationalize its current system by introducing direct funding, by the Federal Government, of national park management, and duly examining the whole system of reserves from a national rather than States' viewpoint.

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