SYSTEM 6...RESOLVING LAND USE CONFLICTS

A paper presented at the
Environment Forum 1981
Mount Lawley College

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1 May 1981

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Introduction

There is probably no area of public debate which generates as much heat as conflict in the use of natural resources. Western Australia has perhaps been fortunate in having abundant land for its small population and conflict has therefore not been drawn into as sharp a focus here as in other parts of the world. However, by the same token, methods for resolving such conflicts are generally rather crude or non-existent. The System 6 Study, which had as its terms of reference the identification of land suitable for conservation and recreation, has also resulted in an attempt to resolve some of the conflicts in the use of land resources in System 6, which comprises the coastal strip between the Moore River and the Blackwood River, including the coastal plain and forested regions of the Darling Range, where population pressure generates the greatest diversity of demand for land.

Earlier studies

On the face of it, the System 6 Study is merely the last exercise in a series in which land throughout Western Australia has been examined, region by region, to define areas which should be set aside for national parks and nature reserves because of their particular value for flora, fauna, landscape, geology or recreation.

This exercise commenced in 1972 when the newly formed Environmental Protection Authority established a Conservation Through Reserves Committee (CTRC).

The Committee, which was chaired by the then Director of the Western Australian Museum, Dr Ryde, had as members Mr J F Morgan (Surveyor General), Dr B E Balme (Reader in Geology, University of Western Australia), and Professor R T Appleyard (Professor of Economic History, University of Western Australia). The Committee divided the State into twelve regions, called systems, which were based on broad associations of land form, vegetation and land use. *(See Figure 1.)*

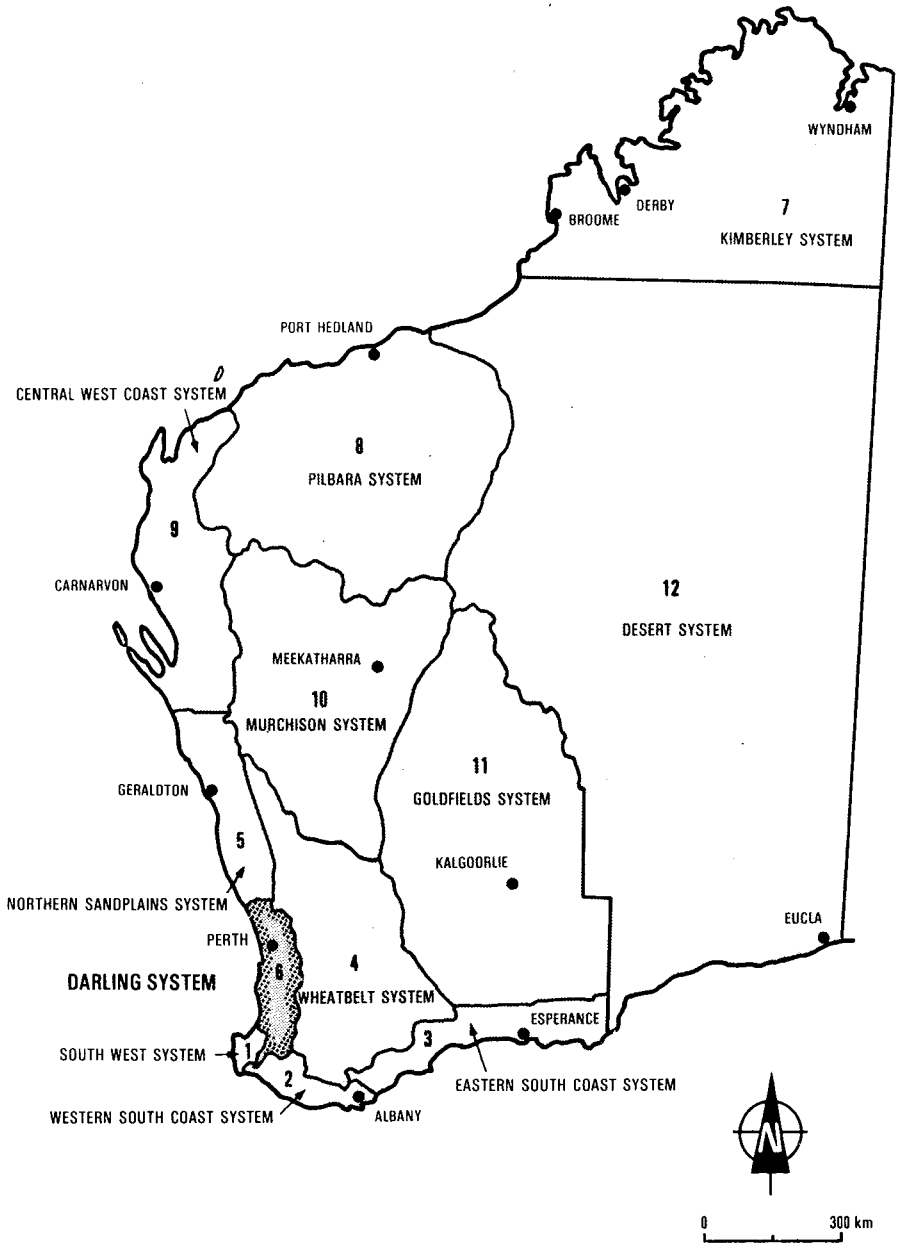

Figure 1. Western Australia's 12 Systems as defined by the Conservation Through Reserves Committee.

System 1, the South West, is the smallest of the twelve, and is located in the extreme south-west corner of the State. Roughly 3,970 km² in area, it includes much of the Shires of Augusta-Margaret River, Busselton and Capel.

System 2, the South Coast, comprises about 18,460 km². Its southern border is the coast between Augusta and Hassell Beach; inland the boundary stretches in a south-west direction north of Donnybrook, Bridgetown, Rocky Gully and Mt Barker.

System 3, the Eastern South Coast, covers the region from the Stirling Range and Hassell Beach to Mt Ragged and the coast near Israelite Bay. It is a region of sweeping plains, rugged hills and mountains, salt lakes, intermittent rivers and estuaries.

System 4, the Wheatbelt, covers about 134,800 km² extending from Mullewa, south to Mt Barker and Jerramungup and east to Lake King.

System 5, the Northern Sandheaths, extends along the coast from north of Gantheaume Bay to the vicinity of Guilderton and inland to a boundary joining Gingin, Coorow, Mullewa and Coolcalalaya. The marine area of the System includes the northern part of the Rottnest Shelf and the southern Dirk Hartog Shelf. It covers about 44,520 km².

System 6, the Darling System, includes the highly populated areas around Perth. It extends from the Moore River in the north to the Blackwood River in the south and inland as far as Toodyay. Including 80% of the State's population in its 25,470 km², just over 1% of the State's area, it is the System most subject to pressure and competing land uses.

System 7, the Kimberley covers 302,580 km². On the west and north it is bounded by the Indian Ocean and on the east by the Northern Territory border. Latitude 19° S has been selected as the southern boundary. Cape Londonderry, northernmost point in the System, is 2300 km by air from Perth and less than 500 km from Timor.

System 8, the Pilbara, which encompasses the Pilbara and Ashburton districts of Western Australia, covers an area of about 271, 750 km².

System 9, the Central West Coast, includes the west and east Gascoyne districts and the north-west part of the Murchison district. It extends along the coast from just north of Kalbarri to the Maryanne Islands north of Onslow, and inland to Gascoyne Junction and is some 94,910 km² in area. The greater part lies in the geological province known as the Carnarvon Basin.

System 10, the Murchison, includes about 208,370 km² of semi-arid country. It extends from the Gascoyne River in the north to Lake Moore in the south and from Gascoyne Junction in the west to the No 1 Rabbit Proof Fence in the east.

System 11, the Goldfields, covers about 295,100 km², bordered on the east by desert, on the south by coastal sandplains and on the west and north-west by the No 1 Rabbit Proof Fence.

System 12, the Deserts and Nullarbor Plain, encompasses the desert regions of the State including a few pastoral areas north-east of Wiluna. It covers an area of about 947,280 km².

Public response to earlier studies

The procedure adopted by the Committee for all the systems, except for Systems 6 and 7, was for their enquiry to be introduced by advertisements seeking submissions and recommendations from the community. One hundred and three written submissions which were received from individuals and organisations wishing to put forward ideas in relation to ten systems were considered by the Committee in the initial stages early in 1972.

On the completion of the Committee's report, comment was sought from the public on its recommendations. Copies of the report were placed in city and relevant country libraries and sent to State and Commonwealth departments and instrumentalities, local authorities concerned, Members of Parliament whose electorates were involved, conservation groups and interested members of the public. Members of the Committee and the technical sub-committee visited Geraldton, Busselton, Margaret River, Manjimup, Albany and Kalgoorlie to discuss the recommendations with those interested.

These attempts to provide an informed background to assist the public in its comments, which were to be considered by the EPA in conjunction with the recommendations of the report, were to some extent misunderstood.

CTRC members who visited Busselton and Manjimup were given a hostile reception. Advertising was taken out on television and in the Press to denounce the recommendations as an 'environmental land grab'.

The misunderstanding obviously stemmed from the erroneous view that the report represented a completed proposal ready for implementation by the Government. In the emotional situation prevailing, no credence was given by some to assurances that the recommendations were to be considered by the EPA in conjunction with the comments received, before definitive recommendations were made to Cabinet.

To try to put matters in their true perspective, the EPA agreed to requests that the period allowed for comment should be extended three months to 30 June 1975. It printed additional copies of the report, with multiple copies of relevant sections covering the controversial Systems 1 and 2, for general distribution.

Seminars were arranged in Busselton and Manjimup at which the aims of the report were explained and spokesmen for various groups and organisations presented their viewpoints. The EPA chairman also visited both towns and elsewhere for further discussions with Shires and interested people.

This follow-up programme cleared up many misconceptions and helped provide a more rational basis for public comment.

At the end of the reporting period, a total of 230 written submissions had been received on the ten systems which were the subject of the report.

Recommendations to State Cabinet

The EPA then considered the CTRC proposals in the light of public comments, objections and reviews, and presented to Government on 9 December 1975 its recommendations in regard to Systems 4, 8, 9, 10, 11 and 12. On 9 February 1976, State Cabinet endorsed all of the recommendations in the EPA's 'Red Book'.

Following further technical appraisal of competing land uses and consultation with local authorities within Systems 1 and 2 a Special Review Committee, chaired by a senior officer of the CSIRO, was appointed to further assess the CTRC recommendations in the light of the public comments. Since much of the area was either forested or used for intensive agriculture, the Committee drew heavily on expertise in these two areas.

The report of the Special Review Committee was released for public comment for a further period of over three months and 200 further submissions were received from a broad spectrum of the community. Following consideration of this report and the public response the EPA, on 9 July 1976, presented recommendations to Government in regard to Systems 1, 2, 3 and 5. On 20 October 1976, State Cabinet endorsed all of these.

The conservation through reserves process can be seen to have evolved from its initial concept, which included:

1. public input
2. CTRC Study
3. public review of recommendations
4. EPA deliberations and recommendations
5. Cabinet decision

The addition of a review committee between stages 3 and 4 enabled what started as wholly conservation oriented recommendations to be scrutinised by a further committee on which commercial interests were also represented.

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Systems 6 and 7 left until last

Systems 6 and 7 were deliberately omitted from the original CTRC schedule, the former, as it includes the Perth region and the bulk of the conflicts inevitable in such an area, and the latter because the remoteness and inaccessibilitity of the Kimberley region resulted in less being known about it.

System 7 was subsequently considered by a reconstituted CTRC chaired by the Surveyor General, Mr John Morgan. It followed the earlier format except that the Committee asked that they themselves be allowed to review the public response to the 'Green Book' before making further recommendations to the EPA. This review has been completed, and the EPA recommendations in the form of a 'Red Book' have now been presented to the State Cabinet.

System 7 then took the process of review one stage further by feeding the public submissions back to the CTRC Committee and allowing them a further period in which to reconsider and possibly revise their original proposals.

System 6: a special case

System 6, or the Darling System, is by any criterion a special case. The boundary extends from Guilderton in the north inland along the Moore River to Mogumber and then south through Toodyay and Boddington to Boyup Brook before returning to the coast along the Blackwod River. *(See Figure 2).* The total area of about 25,000 km^2 is small compared with many of the systems, being just over 1% of the State's land area of 2,396,900 km^2. Nevertheless, it includes over 80% of the population of Western Australia and as a consequence it supports the bulk of the industry and commerce and experiences the greatest demand for foodstuffs, the most pressure for both active and passive recreation, and the greatest need for urban development, trans-portation, timber production, and extraction of raw materials. Against this background, recommending suitable reserves was clearly going to be a difficult task.

System 6 was perhaps the one region in the State which was already exposed to the full range of competing land uses evident in more populous and longer established developed countries. It was not considered that any single committee would be able to marshal the information and understanding of the competing land uses, and it was my predecessor, Dr Brian O'Brien, who conceived the idea of the fabric of interwoven specialist committees that comprise the System 6 Study structure. *(See Figure 3.)*

Criticism can always be made of any initiative to set aside land for national parks and nature reserves, although most generations are proud that this process was carried out by their forefathers. There is irony in the contrast between the praise bestowed on those farsighted

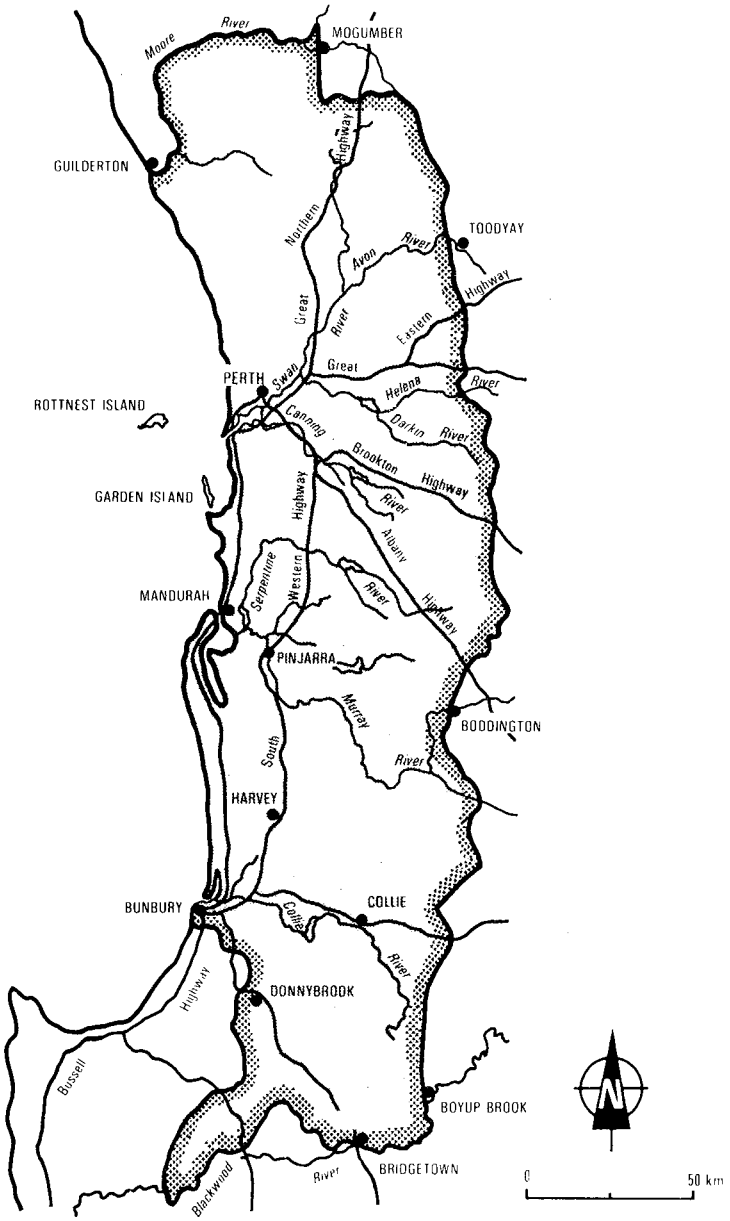

Figure 2. The Darling System (System 6).

enough to have established, for example, Kings Park (reserved in 1872), and the criticism now faced by those attempting to provide similar reserves for the benefit of future generations.

History shows that this has always been the case. The first Chairman of CTRC, Dr Ride, records the problems faced by B M Woodward when he was responsible for selecting the first major nature reserve in Western Australia. The land selected, between Bannister and Pinjarra, was so rugged as to be barely passable and quite unsuitable for agriculture. The reserve was gazetted in 1894, but within four years lobbying began to make the timber available for commercial exploitation. In 1907, the purpose of the reserve was changed from 'Flora and Fauna' to 'Timber', and in 1911 it was incorporated in State Forest.

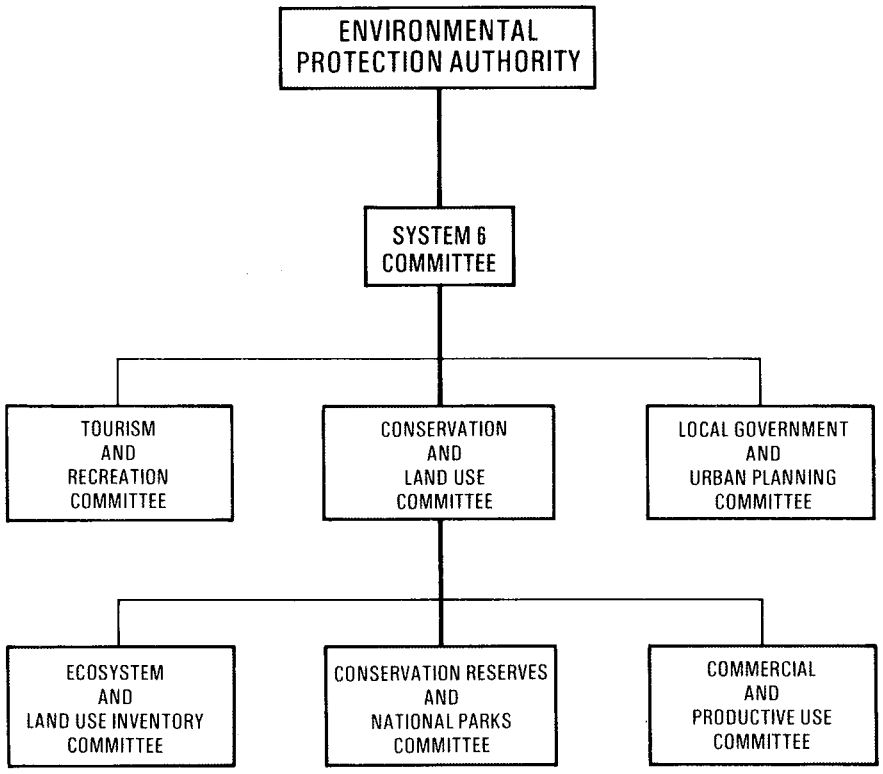

Figure 3. System 6 Study Organisation Chart.

The System 6 specialist committees

It was clear that the CTRC approach, however effective that might be in remote and little used parts of the State, would not succeed in the Darling System. The earlier work had shown the value of a review by a committee consisting largely of members representing industries and resource users which might be in competition with conservation reserves. In this way, the Commercial and Productive Use Committee was born. Although much was known about the region, the data were not always tabulated or available in a form which could be used for decision making. The Ecosystem and Land Use Inventory Committee was established to provide a sound data base on which the Study could be founded.

So the original Conservation Through Reserves Committee was replaced by the three committees in the lowest tier. Interaction between these three committees ensured that recommendations produced by the Conservation Reserves and National Parks Committee had the benefit of both a valid data base and a review by those concerned with alternative land uses.

New committees were established to provide input in the areas of tourism and recreation, and to consider how conservation reserves could best be fitted into the existing planning and management framework. Finally, the System 6 Committee was established, to integrate the work of all the other committees.

To attempt to resolve land use issues by such a complex strategy was something of a gamble, with a risk that the whole process could become interminably bogged down in unresolved arguments and a proliferation of side issues. Firstly, the concept relied on some fifty of the State's busiest people giving their time and experience in the cause of the Study. Secondly, it relied on the belief that resource and land use conflicts could be largely resolved by putting together senior people of strong but varying commitments and beliefs, to achieve a common goal. Finally, it depended on a coherent picture emerging from the handiwork of a very wide variety of artists, each pursuing their own vision of an end result.

It is the breadth of representation that gives the System 6 Study its strength. Where else in the world have the Managing Director of a large industry, the Director of Agriculture, the Chief of a CSIRO Division, the President of the National Parks Authority, the Mayor of a local authority, the Professor of Geography from a University, the Conservator of Forests, the Environmental Superintendent from a large mining company, a Town Planning Consultant, the Chief Engineer of the Water Board, and many more, come together to produce a single blueprint for national parks and nature reserves within a State?

The Committee structure worked in this way: starting at the lowest left

hand corner of Figure 3, the **Ecosystem and Land Use Inventory Committee** had the task of assembling some of the basic data on which the Study was founded. Detailed maps were prepared dealing with landform, geology, vegetation, existing land use, etc. Information was gained on all aspects relevant to the possible resources and uses of the area, and made available to the other committees. As a spin-off from the exercise, the Department prepared an atlas which is now available to those interested in studying the Darling System in detail.

The atlas, which is distributed by University of Western Australia Press, comprises an explanatory text and a series of maps at a scale of 1:250,000. It is available from bookshops and the maps displayed here may be purchased separately.

As with previous studies, the exercise commenced with advertisements calling for public submissions from all interested citizens, groups, industries and departments. A total of 427 submissions were received, mostly from individuals. These formed the basis for further consideration by the **Conservation Reserves and National Parks (CRNP) Committee,** which provided the principal conservation resource expertise and included scientists from the National Parks Authority, Departments of Fisheries and Wildlife, Agriculture (Herbarium), Forests, and Mines, the Universities, CSIRO, etc. Their task was to prepare a report suggesting the areas that were appropriate for future reservation for conservation reserves and national parks. The Committee members divided the region between them, each undertaking to review a specific area, and then came together to prepare their report. The work undertaken by this group was extensive and towards the end involved several all-day meetings.

The **Commercial and Productive Use (CPU) Committee** included representatives of organisations concerned with other, sometimes competing, land uses in the Darling System, such as agriculture, secondary industry, mining, water supply, extractive industries, etc. As such, it provided a balance to the Conservation Reserves and National Parks Committee. Recommendations developed by the latter were considered by this Committee in the light of other, conflicting land uses. The resulting interaction between these two committees ensured that all recommendations for reserves had been adequately examined for the economic implications resulting from their reservation.

The final recommendations from these committees then flowed to the **Conservation and Land Use Committee (CLUC)** whose membership included the Chairman of each of the three lower tier committees. The task of CLUC was to attempt to resolve any outstanding conflicts between conservation and commercial use and to attempt an overview of the potential land use conflicts which had been identified.

The main land uses seen by CLUC to be in competition with conservation and outdoor recreation were mining, quarrying and water supplies, though it also emphasized that there were compatibilities to be exploited. While extractive industries certainly do destroy natural vegetation, it is also true that these uses themselves may be adversely affected by urban and industrial development. This is because once an area of land is built on, the underlying earth resources may well become unavailable. Thus, two apparently incompatible uses, conservation and the extractive industries, are both favoured by a strategy which would exclude other uses, and in this way the options are kept open. The water supply interest clearly has much in common with conservation as both require protection of natural vegetation. However, in ground-water areas, establishment of bore fields may lead to lowered water tables and consequent ecological effects, while dam construction leads to inundation of scenic valleys. Water supply authorities are generally opposed to many forms of recreational use of catchments and reservoirs, at least until increasing demands justify the increased costs due to the more intensive management which would be needed in order to protect water quality.

Thus, CLUC proposed that options should be kept open by means of strategies of vesting which have not previously been considered, so that the conservation, recreation, water supply and extractive potential of selected areas of land may be protected, preventing unplanned loss. These strategies, which mainly apply to land already owned by the State, are further outlined a little later.

The other two second tier committees are the **Tourism and Recreation and the Local Government and Urban Planning Committee.** They considered the need for public planning procedures to provide protection for those natural and man-made landscapes which have high conservation and amenity values. These two committees developed strategies in areas where planning and management deficiencies have been evident in the past.

The **System 6 Committee,** at the top of the committee tree, has had the task of integrating the many recommendations of the Conservation and Land Use Committee, the predictions on recreational demand and resulting recommendations made by the Tourism and Recreation Committee and the management and planning concepts developed by the Local Government and Urban Planning Committee. The three Chairmen from the committees of the tier immediately below were included on the Committee, and the membership was reinforced by inclusion of the businessmen's representative on the Metropolitan Region Planning Authority and the Director of the Department of Agriculture, coming from two organisations with considerable experience in land use planning.

Issues considered by the Study

It is perhaps appropriate to review the work of the System 6 Study by reference to some of the issues which emerged during the work of the committees. Traditionally, the main opposition to the reservation of land for conservation or recreation has come from mining and agricultural interests. However, the potential land use conflicts in System 6 are much wider than this. Indeed, some conservation requirements may be incompatible with recreation, but in harmony with a productive use such as water supply.

Conflicting land uses

One of the most common arguments against the establishment of conservation reserves is not so much on the grounds of existing land uses, but of other potential land uses. For example the Mines Department tends to be opposed to the establishment of reserves in some areas, even where no mining tenements exist, because they are believed to have mineral potential that could be exploited at some unspecified time in the future. Similarly, the extractive industry wants to ensure that certain basic raw materials such as plastic clays, limestone, aggregate and special types of sand remain available. This points to the main problem with resource management — each agency involved pursues a single-minded aim without much consideration for others. In the case of mining opposition to the creation of conservation reserves on the grounds of possible future mineral exploitation, the solution is clearly not to leave all such areas as unvested Crown land, as is sometimes suggested, since this leaves the conservation resource vulnerable to a wide range of possibly destructive developments.

It would be relatively easy for a decision to be made in the best interests of the community as a whole if the relative values of the conservation and mineral resources were established; however, this is rarely the case. At best, the conservation value is a subjective assessment based on incomplete knowledge of the flora and fauna or an arbitrary judgement of landscape value. Usually, the mineral potential is assessed in an equally subjective manner based on what is known of the geology of the region rather than exploration drilling. It is often difficult to know what is in the community's interest at the time the reservation for conservation is being considered. Costly, detailed assessment of resource values only takes place closer to exploitation. Moreover, values change: the mineral resource is subject to changes in value in the market place and the conservation value increases with scarcity and population demand.

A similar situation arises with a catchment or area which the water supply authority may wish to develop at some time in the future. The ultimate decision will depend on several factors including growth of demand, cost, feasibility of dam construction, water quality (particularly

if affected by rising salinity), and so on.

Because a full evaluation of all the resources of a proposed reserve is likely to be very costly, we propose that this should be deferred until the pressure for the alternative land uses is sufficiently high to justify this expenditure. It therefore becomes critically important that options be kept open.

The solution suggested in the System 6 Study is that reservation should proceed so that the conservation resource can be preserved, but that additional purposes may be added. For example, the reserve would be created for conservation and mining, or conservation and water supply, or even all three purposes. Having eliminated other potential competing land uses, the Government would then be able to decide on long term priorities between the declared purposes.

We believe that it is possible to establish multi-purpose reserves under Section 34 of the Land Act. Each reserve would then be vested in a Board of Management consisting of the relevant ministers or people nominated by them. In general, each reserve would be managed by an appropriate conservation agency under arrangements agreed on jointly. If mining exploration was proposed, the prospecting company would be required to comply with conditions designed to safeguard the natural resources.

State Forest

The most obvious mining/conservation conflict within the Darling System is, of course, the mining of the forested areas for bauxite; the leases granted to Alcoa and Alwest cover the whole of the northern jarrah forest. The risks associated with mining are exacerbated by the potential of mining to spread dieback disease *(Phytophthora cinnamomi)* and to increase salinity in the catchments affected.

A great deal of attention has been focused on this issue, and a specific study was carried out in 1978 by a Technical Advisory Group appointed by the EPA for this purpose. Alcoa, which has been mining in the forest for nearly ten years, has shown a highly responsible attitude and has initiated many important research programmes designed to provide data on which rational land use decisions can be made.

Following the report and recommendations of the EPA on the Wagerup Refinery proposal, a number of committees have been established to rationalise planning in the Darling Range. Foremost of these is the Darling Range Study Group — a small, professional team of four experts brought together to carry out a comprehensive study of land use and to advise on land use policies and the co-ordination of land use planning.

The integration of bauxite mining with the protection of natural resources is carried out by a Mining and Management Planning Group

which liaises closely with Alcoa of Australia in the delevopment of their mining plans. The objective is to reach a reasonable balance between the Company's need to mine profitably and the State's need to protect the forest, and water conservation and amenity values of the areas affected, so that the Government may then approve the plans.

There is clearly a close relationship between all these activities. The Darling Range Study Group will help to provide a planning framework within which other land uses, including mining, may be controlled. Research requirements may be indentified by the Research Co-ordinating Committee, while the Steering Committees direct investigations, monitor effects of the operations on water quality, and help to develop rehabilitation and regeneration techniques.

Because of the activities of these various committees, a good deal of rationalisation and co-ordination has already occurred. The System 6 Committee network has merely expanded the consultative process to include many non-governmental organisations and individuals who had not previously participated in the planning process.

The suggestion that a reserve should have joint purposes of conservation and mining may shock many concerned with the preservation of the natural environment. Unfortunately, the image of the mining industry is debased by its legacy of slag heaps, slime dumps and pollution. It must be stressed that the declaration of such a multi-purpose reserve does not mean that productive mining will necessarily occur. What it does mean is that mineral potential is recognised in addition to conservation value and that at some later stage, if sensitive exploration has revealed a viable mineral deposit, a decision will be made as to whether mining can actually take place or whether a reserve should be set aside for conservation alone.

This decision should clearly be based on the relative value of the conservation reserve and the mineral deposit, the rarity of the deposit and its importance to the community rather than merely to the mining company, and the degree to which mining could be carried out without detracting from the conservation value of the reserve, other than in a localised and temporary way.

Much of the land in the Darling System has been extensively modified since settlement and a high proportion of that which remains uncleared is State Forest. Forested areas therefore provide the best conservation opportunities within System 6. Through its Working Plan No 86, the Forests Department has already identified a system of Management Priority Areas (MPAs) for conservation. Each MPA consists of a core area and buffer, the core having been selected for the quality and type of forest cover.

It could be said that this initiative by the Forests Department, which has been supported by this Study, has resulted in the need for less

research in State Forest than in cleared areas. The fact that State Forest is vested in a single authority well able to manage it also simplifies the issue of conservation. Because of these factors, there may be a tendency to underestimate the true importance of forest reserves.

While the security of tenure of MPAs is assured — it is equivalent to that of a Class A reserve — there is not the same security of purpose. This has, of course, made it possible for most of the forest to be pegged for mining and it does not prohibit clearfelling for timber production. The lack of security of conservation MPAs in State Forests has been a cause of concern to many people anxious to preserve at least part of the jarrah forest from any form of commercial exploitation. A proposal by the Conservation Council of WA for a major reserve in the northern jarrah forest, which would largely consist of existing MPAs, emphasises the concern of conservation groups over the lack of security of purpose. While this proposal arrived too late for consideration by the various System 6 committees, it will nevertheless be picked up in the public review period.

In respect of bauxite mining, the System 6 Study acknowledges the important work already being undertaken through such committees as the Mining and Management Programme Liaison Group, which includes representatives from several State departments and Alcoa. It believes that the conflicts between bauxite mining and conservation reserves in State Forest can best be resolved by consultation and compromise. For this reason, it has not suggested that the MPAs be immediately declared for conservation in such a way as to foreclose this ongoing process of consultation. It has to be remembered that the Company does have legal rights to mine within the whole of its lease area. However, the Study does recommend that, once a compromise acceptable to both the Company and the State has been reached, the MPAs be designated appropriately for conservation or recreation and receive full security of purpose from then on.

Management for 'people pressure'

Another important part of the System 6 Study has been the problem of management. With the more remote reserves, questions of management have been made fairly straightforward by the lack of 'people pressure' on reserves. Management has been by the National Parks Authority, the Western Australian Wildlife Authority or, for some of the smaller recreation reserves, by the local authority. System 6, with its very large population, poses new problems with which the existing management structure may well be unable to cope. The demand for large accessible areas of open space for fairly intensive outdoor passive recreation, is increasing. Examples include Kings Park, Whiteman Park, and the John Forrest and Yanchep National Parks. The management requirements for this type of facility, which we have defined as a regional

park, are different from both the national park, with its emphasis on the natural environment and low impact activities, and the local reserve where the size is small enough for a local authority to manage. Regional parks may combine natural and attractive man-modified landscapes, and provide special facilities to cater for large numbers of visitors.

Land ownership

Another concept which is worthy of development is the linear or pathway park, where a reserve may follow a natural feature such as a river, coastline or scenic ridge. In general, these linear parks would cater for walking and possibly horse-riding and cycling. The concept may be applied not merely to land reserved for conservation or recreation, but could also include State Forest and privately owned land.

It seems to me that, if there is one position where current attitudes need urgent re-examination, it is on the question of the sharp distinction drawn between publicly and privately owned land. Naturally, there are people in the community who believe that the ownership of freehold land entitles them to the absolute right to do what they like with the land. This may include clearing vegetation, filling in wetlands or constructing buildings. Yet in towns these same people generally accept restrictions on the type of dwelling they may build under local town planning scheme zoning.

Now that clearing restrictions have been imposed in a number of catchments in the south-west of the State to protect water resources from rising salinity, there is perhaps the beginning of a realisation that freehold ownership may not imply absolute rights. On the other side of the coin, government agencies have perhaps leaned too much towards resumption or acquisition by purchase, to protect land for conservation purposes. Rigidity on both sides has sometimes led to suspicion and even hostility, which cannot serve the public interest.

As an example of this rigidity, there is an argument that to protect water-courses from obstruction and pollution, a riverside reserve should be established along both banks, and to ensure the rights of public access, the foreshore reserve should be acquired by the Crown. However, the riverside landowner, in many cases, relies on the stream for stock water or the extraction of water for irrigation. The resumption of the foreshore penalises him to an unreasonable degree and he understandably objects.

In Victoria, this problem has been solved to a large extent by the reserved foreshore land being leased back to the farmer under the Lands Act, in such a way that public access is assured, but management and water rights are retained by the landowners. Where the farmer has objected to such an arrangement, it has usually been found to be due to inconsiderate behaviour by some members of the public. Fences have

sometimes been destroyed and stock harrassed or even shot. The community only deserves access to scenic areas if they are prepared to act in a responsible manner.

Similarly, in the United Kingdom, where there is very little Crown land, the system of national parks has largely depended on the inclusion of freehold land in the park system. Again, there is a risk of abuse, but on the whole the system works well, with education of the public through the 'Countryside Code' being strongly promoted. Where improvements are needed to make access easier, for example, by the provision of stiles, gates, pedestrian bridges or walkways, it is reasonable that these be provided by the Crown rather than by the landowner.

The development of a substantial linear park system is only likely to be successful if we can come to terms with the private landowner. Under threats of acquisition, which the Conservation Through Reserves programme has been careful to avoid, landowners understandably become suspicious or hostile, yet in my experience there exists, particularly within the farming community, a philanthropic attitude to public enjoyment of flora, fauna and landscape attractions, which could be harnessed to the public good.

My own view is that much of the destruction that occurs is the result of ready access by the motor vehicle. Wherever the car or trail bike can venture, rubbish and litter will be dumped, wildlife will be disturbed and vegetation will be destroyed. If the linear park concept is to succeed, I believe we will need to exclude the motor vehicle except at a few carefully controlled points of access. Hikers, bushwalkers, cyclists and horse-riders generally cause little disturbance and destruction to the countryside and these forms of recreation should be encouraged, particularly in linear parks where access is likely to be narrowly channelled.

The success of conservation without acquisition clearly depends on the acceptance of some form of planning control on freehold land. Victoria has moved towards this end with its preparation of Statements of Planning Policy for scenic landscape areas such as the Dandenong Ranges and the Upper Yarra Valley. Under these policies, declared areas are subject to minimum lot sizes and stringent development restrictions. Preservation of natural features including vegetation may be mandatory.

The implementation of such measures, which may require amendments to legislation, would not be achieved without some opposition. Landowners may resent having controls imposed on their activities or require high monetary compensation; fears may arise that further restrictions culminating in acquisition might follow. The process cannot be risked. Once a few landowners have been prepared to co-operate in such a landscape conservation programme and the

advantages become apparent, others will follow. A softening in attitude of some government departments away from regulation and autocratic direction and towards consultation and co-operation with landowners will also be needed.

Planning and managing open space

One of the most important issues to emerge during the Study has been the need to plan, co-ordinate and manage open space throughout the State. A high degree of co-ordination already exists between the National Parks Authority, the WA Wildlife Authority and the Forests Department. However, at a regional and local level, there is neither co-ordination nor overall planning, except in the Metropolitan Region where the MRPA does have statutory powers that enable it to undertake coherent planning. However, as a planning authority, the MRPA does not see itself in a major open space management role although it has in some cases been forced into the management arena.

Many are more qualified to discuss the issue of co-ordinated land use planning than I, and indeed many have done so. Attempts have been made to co-ordinate planning in several regions outside the Metropolitan Region which are subject to urban pressure, for example, the Bunbury Regional Planning Scheme, and more recently the establishment of the Mandurah and District Planning Committee. However, outside the populated areas, there has been less forward planning, and local authorities have by and large allowed local pressures to influence land use. Apart from the system of reserves established on a State basis and expanded by the Conservation Through Reserves programme, there appears to be no co-ordinated commitment to open space at a local or regional level outside the Metropolitan Region.

The obvious drawback in the present system is that without co-ordinated planning, economic forces prevail. That is, unless land of high conservation value is protected for that purpose, mounting pressures for agriculture, mining, rural subdivision or industry may well result in it being lost forever. Only where commercial land uses are shown to be not viable is there a chance of reversion to a natural condition, and even then rarely to its original state.

At present, no minister has specific responsibility for open space planning and management although several portfolios include elements of these functions. The System 6 Study has proposed the establishment of a ministerial secretariat and organisation *(shown in Figure 4)* which could be attached to an appropriate portfolio. To make such a suggestion at a time when every effort is being made to cut back on the public service and eliminate existing functions of Government, may sound rash. The fact is that the present lack of co-ordination, planning and management of open space other than at a national parks level is

seriously affecting the viability of the State's conservation and recreational programmes.

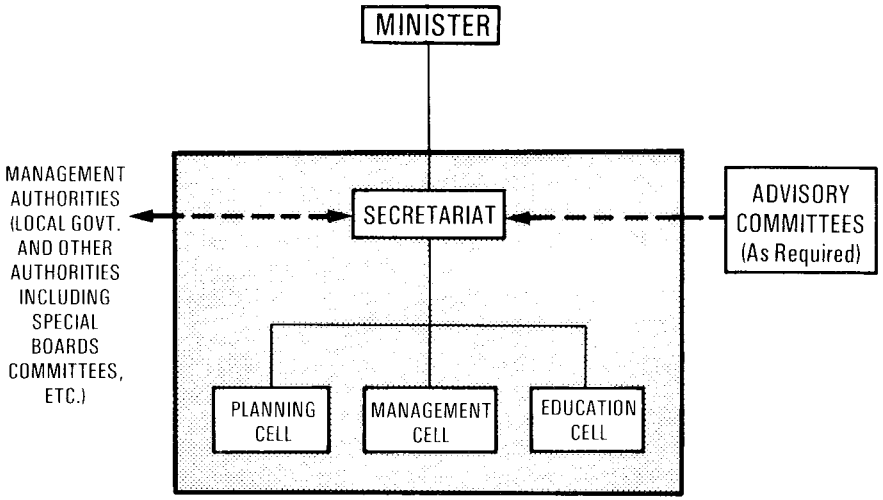

Figure 4. Structure for co-ordinating planning and management of open space.

Regional park concept

Such conservation and recreational services are not uncommon elsewhere in the world, particularly in North America. Generally, they are pitched at a regional level and require the preparation of regional conservation and management plans before federal grants are made available. Perhaps, we should be urging such a strategy on a national basis in Australia.

The essence of such a regional park concept is, of course, one of local involvement and a high degree of local management. Again, this concept is not new and has been widely practised in North America and in Europe. In Britain, for example, the Countryside Commission has established a network of regional park boards through which the Commission disburses purpose-tied grants and to which the Commission makes available professional advice and expert services. The boards have a dual role related to conservation of the countryside,

flora, fauna, landscape, rivers, beaches etc., and also to recreation. They may make by-laws and appoint wardens. They may also establish information centres and facilitate access through scenic areas.

At the present time, our nearest examples to regional parks are Kings Park and Whiteman Park, the former managed by a Board established under its own Act and the latter jointly managed by the MRPA and the Swan Shire Council.

Local authorities clearly have a major role to play in the establishment and management of regional parks. It must however be recognised that such parks, particularly those of a linear nature will often extend across local authority boundaries and attract visitors from the whole region. The cost of management will in some cases be high and perhaps beyond the capacity of individual councils. Some regional parks authorities, for example that at East Bay, California, have been established not by an initiative of the State but at the instigation of several local authorities who combined to acquire and manage an attractive stretch of country under pressure from urban development.

A further development of the regional park concept is the designation of special parks or areas of a large park for special purposes. In this way, sections of a park may be highly developed for intense recreational use with extensive car parking and provision of facilities, while at the other extreme some areas may be set aside for the conservation of flora and fauna and access deliberately limited. Some areas may be developed for walking, cycling or horse-riding. In general, the regional park is managed for greater 'people pressure' than a national park.

The System 6 Study has not explored these alternatives, nor is it competent to do so. What it has done is to recommend a permanent organisation, initially quite small, which may develop such concepts in consultation with the existing local and State authorities presently active in this field.

Recreation in catchments

The Study has also explored a number of other potential conflicts in land uses and in some cases initiated specific studies to develop a more rational basis on which to make recommendations. One such subject is that of recreation in water supply catchments and on reservoirs. Water supply and health agencies are generally opposed to encouraging recreation in catchments and recreational use of reservoirs, on the grounds of either risks to public health or substantial increases in costs resulting from the need to pre-treat water prior to delivery to consumers. Yet, increased demand for water is and will continue to bring more and more land and rivers into declared catchment areas. At the same time, the population growth which is giving rise to the increased water demand, will place increasing pressure on undeveloped land for passive recreation.

Several public submissions to the Study have called for a relaxation of restrictions on recreation within catchments and on reservoirs, and this theme was picked up by the Tourism and Recreation Committee. By contrast, the Water Purity Committee — not part of the System 6 Study — has called for more restrictions rather than less. Our task in System 6 has been to try and determine what is best in the whole community's interest.

A study carried out by the Department of Civil Engineering at the University of Western Australia at the request of the System 6 Study has pointed the way towards a solution; however, more needs to be done, particularly in the way of field trials, to determine what the effect of controlled access and use would be.

It may be possible to reconcile the two positions by a study, for example, of reservoir dynamics and the rate of mortality of pathogens injected into a large water body. Parts of the catchment release very little water which finds its way into the dam and there may be opportunity here to permit backpacking and camping in those drier areas remote from the catchment streams. Again, by restricting vehicle access, it should be possible to separate the genuine bushwalkers from the influx of large numbers of day tourists in more sensitive areas. The Study has not recommended immediate changes to the present practices. It is a fact that water supply authorities around the world have yielded further and further to public demand for allowing increased recreational use of catchments and reservoirs.

Recommendations for specific localities

The general principles and concerns of the Study have been applied to 209 specific localities — 108 in the Metropolitan Region and 101 in the country — almost all of which were originally identified by the Conservation Reserves and National Parks Committee. Through the identification of these specific localities, the Study has aimed at representing the major vegetation types, landforms, and natural scenic areas of System 6. These localities have been considered in detail, and the recommendations on them are aimed at protecting or developing their conservation or amenity value.

Existing national parks and nature reserves comprise 536 km^2 or 2.1% of the area of System 6. The Study has aimed at rationalising the boundaries of many national parks to facilitate better management, and has recommended, where necessary, the addition of land to absorb the increasing recreational pressure on our National Parks. The concept of a 'conservation buffer zone' has also been put forward by the Study, to protect particularly sensitive areas. If implemented, this would involve, in many cases, co-operation between local landowners and the particular management authority concerned.

However, due to the value of freehold land in System 6, the best opportunity for dedicating natural areas to conservation or recreation lies within State Forest. Management Priority Areas (MPAs), established by the Forests Department in its Working Plan, have received the endorsement of the System 6 Study. There are 46 MPAs for conservation or recreation in or near System 6, and the Study has developed and recommended a means of establishing their long term security in State Forest.

In making specific recommendations for the Metropolitan Region, the Study has worked to endorse and complement the planning of the MRPA in many areas. Many important landscape features, such as some of the wetlands of the coastal plain, some of the major rivers and valleys, and the Darling Scarp, have already been 'reserved' under the Metropolitan Region Scheme. The Study has made some suggestions for the planning and management of specific areas of regional open space.

If all the recommendations of the System 6 Study are accepted and implemented, almost 4,000 km^2 or 14.6% of the area of System 6 will be dedicated in some way to major parks and nature reserves, with more than half of this land lying in State Forest. 261 km^2 of this area is freehold land which would be subject to the planning procedures outlined earlier. This overall figure cannot be regarded as too great if we consider the paucity of reserves in the agricultural areas inland of System 6 and the increasing demands from recreation and other land uses which will place great pressure on our natural areas.

Conclusion

Public participation is the keynote of the EPA's approach to the creation of reserves for conservation and recreation and System 6 is no exception. It should be emphasised that the recommendations contained in the System 6 Study Report ('Green Book') are there for everyone to consider, discuss and comment on. Neither the Government nor the EPA has adopted the proposals, nor will they do so until an extensive period of public review has been completed and all further submissions, whether they be by departments, councils, industry, mining or conservation bodies or just individuals, have been carefully considered.

This consultative and assessment process is long and complex, but vitally important. There is a feeling within the community that the single lone voice will not be heard amongst the clamour from large departments and powerful, well organized interests and that a proposal once committed to a published report cannot be changed. Let me urge you that this is not so and will not be so with the System 6 Study.

The people who served on the various committees were selected

because of their breadth of vision and expert knowledge in different fields. None of them, I am sure, are so committed to any one proposal that they would be deaf to reasoned argument to the contrary. I have asked all of these committees to stand ready to reassess any of their proposals or recommendations in the light of the public response. I cannot speak too highly of the dedication and energy of the many advisors and committee members who have combined to produce the 'Green Book'.

The proposals have been more than four years in the making — much longer than we had intended — but the consultation process cannot be rushed. Essentially, the proposals have been a team effort from a remarkable team, yet probably no one member of the team will be wholly satisfied with the final product. Perhaps, this is inevitable in the circumstances. Now the proposals will go to the public review stage and will be subjected to critical examination. Some people will be strongly for conservation, others will see their commercial or specialised interests threatened. Again, this is inevitable. I sincerely hope all groups will prepare responses to the 'Green Book' and send them to us. I promise that all responses will be carefully considered.

The Report itself falls into two parts, the first deals with the issues of conservation, the conflicts and their solution; it also deals with planning and management strategies. The second part sets out the specific sites recommended for reservation, with an indication of how this should be achieved and other appropriate action that should be taken.

In due course, and probably not for twelve months, there will be a 'Red Book', containing final recommendations from the EPA to the Government. The Government will carefully assess the implications of all the recommendations before making a decision on behalf of all the community. In this Study, we have tried to cover every point which the Government will wish to consider in its deliberations and we hope to have made this task easier.

This generation will see tangible benefits from the Conservation Through Reserves programme, which has culminated in the System 6 Study, but the next generation and succeeding ones will gain far more. At this time, it is perhaps hard to see the land use pressures of the mid-21st century, yet they will come as surely as populations double every 25 or 30 years. I would like to believe that the citizens of the year 2050 will look back on this generation as one of wise men and women, far-sighted in their vision of the future and not merely pre-occupied with their own material wealth and well-being.