

# MANAGEMENT OF REMNANT BUSHLAND FOR CONSERVATION IN THE WHEATBELT

## THE OPERATIONAL PERSPECTIVE

by

K.J. WALLACE

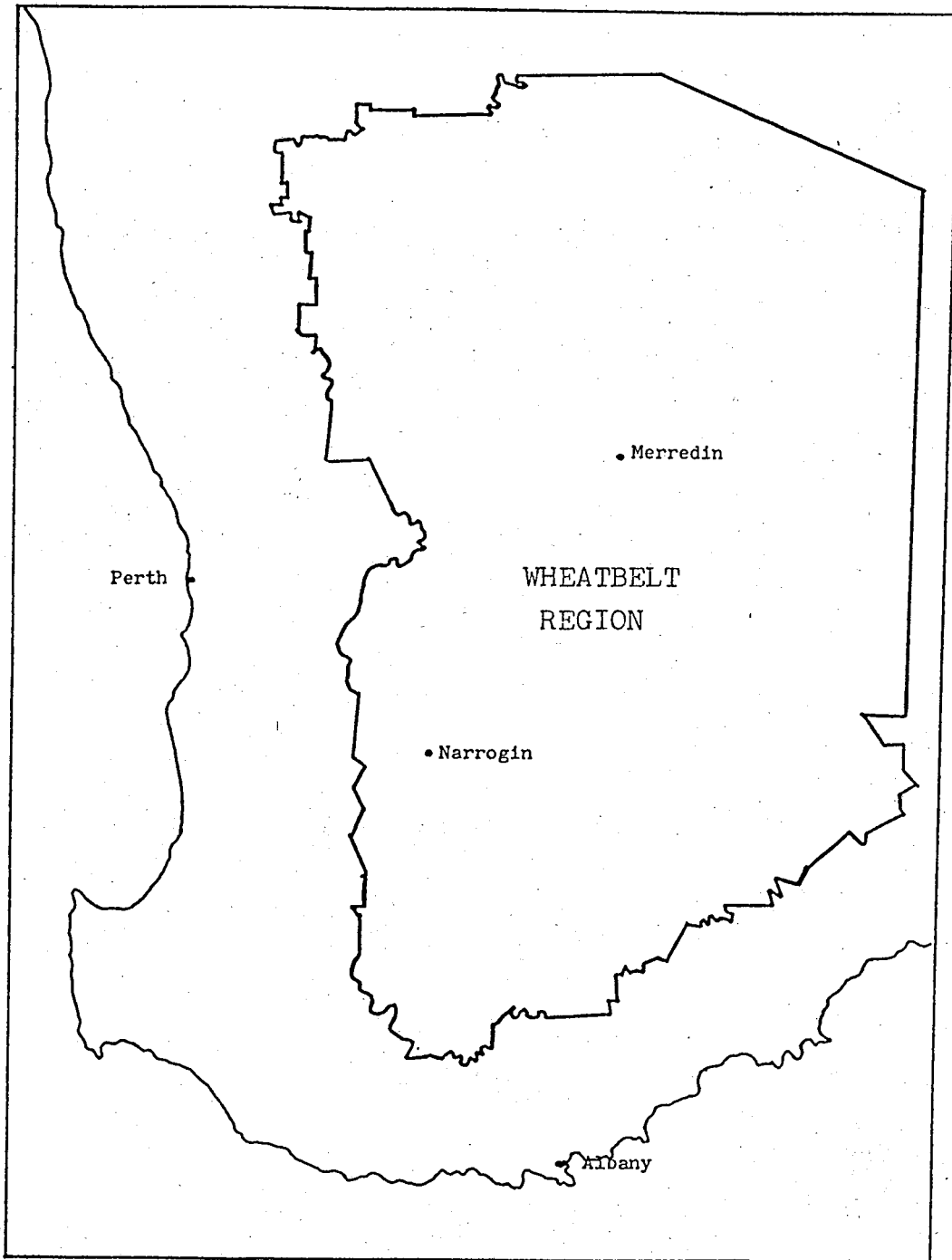
### 1. INTRODUCTION

The Wheatbelt Region (Figure 1) of the Department of Conservation and Land Management covers some 145,000 square kilometres and includes a large section of the agricultural land in Western Australia. Parts of seven botanical districts (Beard 1980) occur in the Region which is situated within a broad transition zone between the inland arid zone and the wetter south-west (Hopper 1979). Major vegetation formations include woodlands, mallee and kwongan scrub. The most obvious physical features in the gently undulating topography are granite monadnocks, laterite breakaways and salt lake systems.

That the Region is important for wildlife conservation is emphasized by the high density of rare and geographically restricted plant species (Hopper and Muir 1984) there, and the presence of endangered fauna such as the Woylie (Bettongia penicillata ogilbyi), Numbat (Myrmecobius fasciatus) and Red-tailed Wambenger (Phascogale calura) (Strahan 1983).

Most of the natural vegetation within the Region has been cleared for agriculture and subsequently many wildlife (flora and fauna) species have disappeared. While a few have readily adapted to or been favoured by the new, largely agricultural

Figure 1: Wheatbelt Region of the Department of Conservation and Land Management.



Scale

0 50km

habitat, most persist within, or depend on, remaining pockets of natural bushland.

Land set aside in the Region for wildlife conservation is contained within 626 reserves (data as at March 30, 1985) which have been established for wildlife conservation alone, or in conjunction with another purpose such as water catchment. While other reserves and privately-owned bushland are important for wildlife, the long term tenure and usage of such land is uncertain.

The 626 wildlife reserves within the Region range in size from 0.4 to 309000ha, and have a median size of 117ha. The latter figure emphasises that most reserves are small. Together the 626 reserves total more than one million hectares and account for some 7.5% of the Region's surface area, however this is reduced to 3.5% if the three largest reserves are excluded. Within the western part of the Region the percentage of land surface in conservation reserves is even further reduced, and little further bushland remains which could be set aside for wildlife conservation. With few exceptions, reserves set aside for wildlife conservation fall clearly into the category of remnant vegetation.

This paper examines the requirements for successful management of wildlife reserves within the Wheatbelt Region from the viewpoint of a field manager. Management objectives and management process are also briefly detailed.

## 2. MANAGEMENT OBJECTIVES AND MANAGEMENT PROCESS

The management objectives for wildlife reserves within the Wheatbelt Region are:

- (1) to maintain representative samples of the natural landscape and wildlife occurring within the Region.  
Within this objective it is recognised that -
  - (a) replicate samples of each habitat type are required; and
  - (b) where land important for wildlife exists outside reserves, then inclusion of these areas into the reserve system should be sought;
- (2) to manage reserves for long term, maximum species diversity and the conservation of rare species;
- (3) to maintain ecosystem processes; and
- (4) to develop in local communities an appreciation of wildlife values and, in particular, these values as expressed in the system of wildlife reserves.

The management process operating to achieve these objectives is summarised in Figure 2. In this process management plans, tactics and objectives are derived on the basis of existing data as constrained by broad scale (for example State or National) and local social, economic and political factors. Proposed management is also influenced by previous management action, and the current philosophy and methodology of management.

It is important to stress that all elements listed in the process are inter-related and that the management process is continuous - there is no beginning or end. Furthermore broad scale social, economic and political constraints may differ greatly from those operating at a local level. Failure to recognise this will lead to inappropriate management decisions, especially when dealing with remnant vegetation scattered through a large region. Finally, process diagrams such as that in Figure 2 do not indicate where emphasis is placed. That is, whether or not emphasis is on planning; or research; or implementation; or social, economic and political constraints. The current emphasis within the Wheatbelt Region is on management action in relation to local social, economic and political constraints.

To successfully implement the management process outlined, and achieve management objectives, the manager requires:

- (1) an adequate research data base;
- (2) an adequate technical data base;
- (3) an informed and sympathetic public;
- (4) adequate resources; and
- (5) an accepted philosophy/methodology for drawing together (1)-(5) and implementing management.

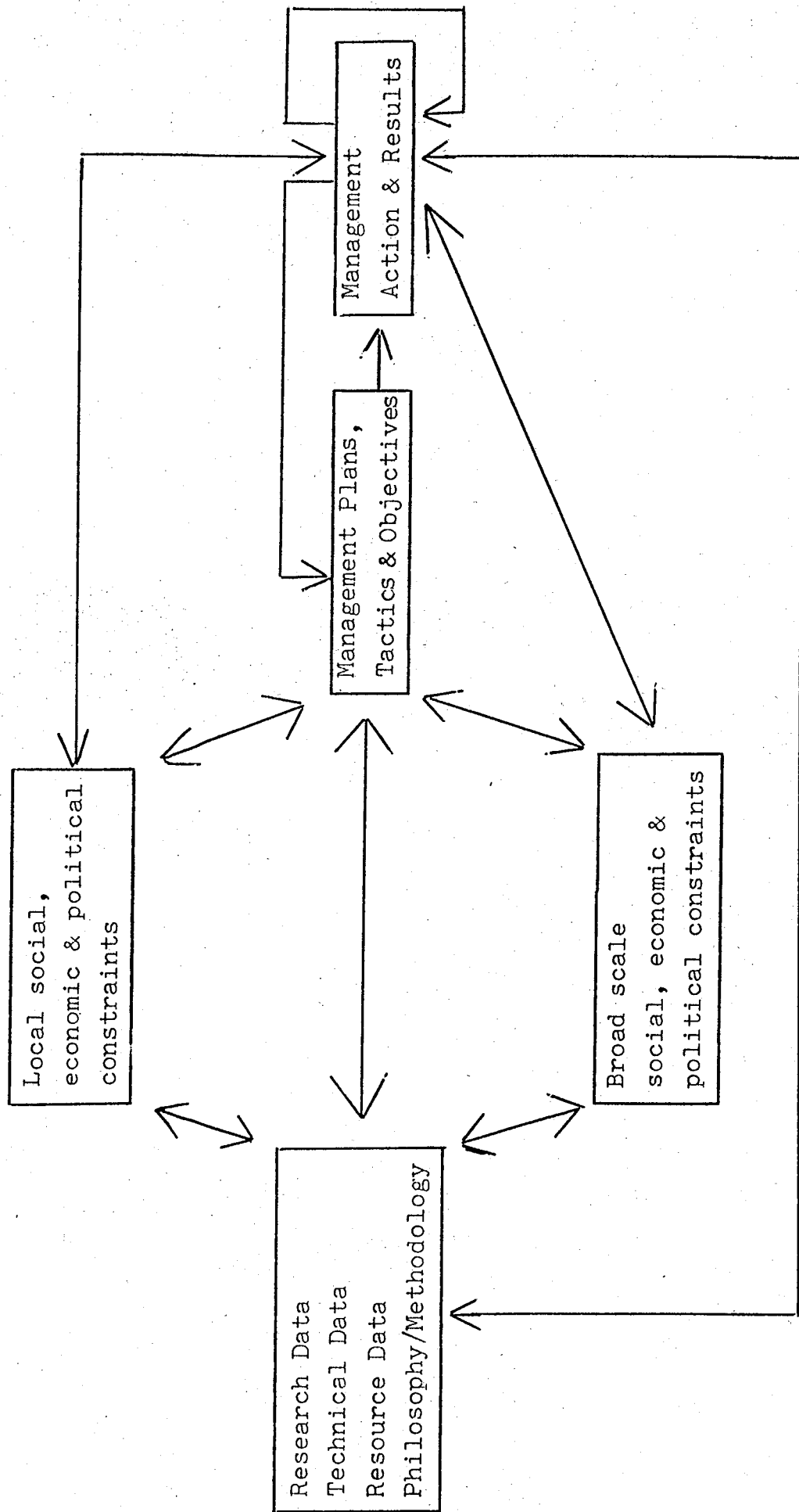
### 3. REQUIREMENTS FOR SUCCESSFUL MANAGEMENT

#### 3-1 Adequate Research Data Base

That successful management requires an adequate research data base is apparent from the variety and content of

FIGURE 2

MANAGEMENT PROCESS



research papers presented at this workshop. Furthermore the important role for managers in research has been discussed in the review paper by Hopkins and Saunders, "Ecological Studies as a Basis for Management" (page ).

With one exception, sociological research, the main research themes relevant to management of remnant areas were discussed at the workshop. Sociological research has the potentially important function of informing managers of appropriate methods for managing human usage of reserves and informing the public of wildlife conservation issues. Such advice is particularly relevant to managers of remnant areas which have a high perimeter/area ratio, and therefore a large interface with human activities in comparison with extensive tracts of bushland (see also section 3-3 below).

Two further points should be raised. Firstly, it is generally recognised that liaison between management and research staff is essential to ensure both the relevance of applied research and optimum involvement of management. However it must be emphasized that liaison should occur as early as possible in the development of research projects. For example, two equally attractive sites for research may have quite different implications for management. Given that sites are often selected during the early stages of project development, liaison is essential to ensure

that both management and research gain the maximum benefits from a particular study.

Also researchers should recognise that most managers have a proprietorial attachment to land under their control which is akin to the feeling of farmers for farmland. This attachment explains in part the objections by managers who are poorly informed by research workers concerning research activities.

Finally, while most researchers are constrained to short term projects, an understanding of long term changes is integral to successful management. Therefore short term studies involving survey should be conducted within the context of a long term data acquisition strategy, for example works should be site specific. This is particularly important for small reserves where environmental changes, for example through fire, may be rapid and all encompassing.

### 3-2 Technical Data Base

The function of the technical data base is to provide the most effective and economic means of implementing management strategies. Information includes data on machinery, fire protection techniques, methods of controlling pest species, and so on. While the distinction between research and technical data bases is blurred, managers will most often be responsible for generating technical data on the basis of experience in the field.



Two important elements of an adequate technical data base are a core of experienced managers, and a written record of management experience. Neither of these are currently fulfilled in the Wheatbelt Region.

### 3-3 Management of People/Communities

The fact that wildlife managers, at least in the Wheatbelt Region, allocate a significant proportion of their time to managing people would surprise most of the general public, but few managers. There are several reasons for this involvement with people management.

Firstly, the large number of small reserves in the Region results in a large number of landholders adjoining Departmental land. This, combined with the large number of Local Authorities (42), entails an important but demanding liaison function.

Secondly, islands of vegetation attract public attention, both desirable and undesirable. The negative aspects are demonstrated by a recent survey aimed at recording illegal usage of wildlife reserves in part of the Region for gravel/sand extraction, rubbish dumping and timber cutting. While some of the usage recorded is historical and pre-dates the current wildlife purpose of reserves, that 86% of the 90 reserves sampled have been detrimentally used by people indicates the potential for reserves to deteriorate through time as a result of neglect. Of even greater concern is that 48% of the reserves had received illegal usage within the 12 months

preceding the study. The need for management is apparent, and the study reinforces the management axiom of "if no-one cares for a particular area of bush and its management, then neglect and abuse will be the management practice". It must be stressed that human usage is likely to have a far greater impact on remnant vegetation areas than on large bushland areas.

Thirdly, recreation on reserves is placing an ever-increasing workload on management personnel. As with other forms of human usage, the impact of recreation on small remnant areas is likely to be greater than on large areas of bushland.

Finally, the above, together with the fact that all management activity contains a component of people management, results in a large proportion of the managers work time being spent on matters other than wildlife.

Of course working with people is in fact an important part of wildlife management because:

- (1) increased political support for wildlife conservation is needed;
- (2) local communities must be better informed and encouraged to be sympathetic to wildlife conservation. If rural communities are opposed to conservation, then it is doubtful whether reserves can be successfully managed; and
- (3) managers themselves must be attuned to community thinking and aspirations.

All the above are more difficult to achieve for remnant bushland than for large areas such as National Parks. For example, it is easier to politicise areas with scenic attractions of national importance.

### 3-4 Resources

In the Wheatbelt Region there is about one management person, including clerical staff, to every 70,000 ha of wildlife reserves. Given the high level of biological management required for remnant bushland, and the human usage problems discussed above, insufficient resources are available for management to achieve the objectives listed in section 2.

The inadequate resource base for management can largely be attributed to two factors: the low political priority accorded to wildlife conservation; and given the large area and low population of Western Australia, the small resource base for Western Australia as a whole.

Also relevant are four facts listed by Wright (1982) as resulting in resource management problems for small (less than 400 ha) historic sites in the United States National Park System. These are that:

- (1) they are often overshadowed in budget priority by larger, more renowned parks;
- (2) their visitor use is often low, meaning less political leverage;
- (3) their resource management problems tend to be small and are viewed, often wrongly, with less concern

than those encountered in larger parks; and

- (4) they often do not have the staff and expertise to deal with the problems they face.

Each of these factors contributes to the resource problems experienced by managers of remnant areas in Western Australia.

Finally, managing remnant bushland scattered over a large area is inherently inefficient in that the amount of time spent travelling is proportionately much greater than is the case for those managing large, consolidated areas of bushland from nearby or on site bases. The effects of this are often under-estimated or not recognised by those unfamiliar with land management in areas such as the Wheatbelt Region.

The importance of increasing public and political support for wildlife conservation has been stated above. However, even with increased public support, resources available for management of remnant areas are likely to be inadequate to achieve management objectives, at least within the short to medium term.

When resources are inadequate, three broad strategies for change are available. These are to: (a) change management objectives; (b) seek alternative resources; and (c) increase management efficiency.

Currently management objectives are under review, however it is unlikely that they will be changed to any significant degree.

The second strategy, that of seeking alternative resources, is currently being pursued. One means of gaining resources is discussed by Moore (page ) in her paper on "The Role of Planning in Management".

With respect to efficiency, while managers must always strive to use resources with maximum efficiency, this is imperative when resources are scarce. In this context it is essential that management priorities are established and adhered to, and in particular, it is important to do a little well, rather than a lot badly. It is also necessary for planners and others to be realistic in the objectives and prescriptions they endorse in management plans and strategy documents.

### 3-5 Management Philosophy/Methodology

A set of management philosophies and methods, agreed to by researchers, planners and managers, is essential to effective management. Without such a set, those ingredients for successful management previously discussed will be inefficiently used, and the public face of management less effective than it should be.

Unfortunately management philosophies are often assumed at all levels, and esoteric from the viewpoint of field managers. Clearly senior staff, including field managers, have an important function in producing realistic management philosophies which all field workers can accept.

The current review of management objectives within the Region should result in an improved management philosophy. However to improve the overall approach to management will require a change from crisis management to pre-emptive management. The latter is typified by:

- (1) clear management objectives and methods;
- (2) management philosophies which are largely agreed to by all involved in management;
- (3) written plans of management;
- (4) management action which prevents problems arising rather than reacting to them; and
- (5) a written rather than oral history of management practices, techniques, and results.

Whether or not the transition to pre-emptive management can occur with a minimum input of further resources is one of the greatest challenges currently facing managers in the Wheatbelt Region.

#### 4. CONCLUSIONS

Given that no management personnel apart from enforcement officers were based within the Wheatbelt Region until 1978, reasonable progress has been made towards fulfilling the criteria for successful management listed in section 2. Also, if a moderate increase in resources is achieved, the transition from crisis to pre-emptive management methods will be attainable in the short term.

If at the same time further research can be successfully translated into effective management, then the short term persistence of remnant vegetation in the Wheatbelt Region seems assured with few, if any, losses in the biota. The longer term view is less certain, but hopefully at worst, sufficient knowledge will be gained from experience with small reserves to prevent future problems on large bushland areas. In this sense remnant bushland areas are the "coalminers' canaries" for our large wildlife conservation areas, and are therefore worthy of increased attention from both management and research.

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