ACQUISITION OF RESERVES IN WESTERN AUSTRALIA

The responsibility for the conservation of native fauna through the reservation of fauna sanctuaries is shared by the Department of Fisheries and Fauna and the Western Australian Wildlife Authority. The objectives of these two bodies are to conserve a cross-section of habitat and by so doing to conserve a cross-section of native fauna.

Few animals are able to live outside their natural environment and any change in their environment normally affects the population numbers and distribution of a particular species. To conserve the diverse fauna of Western Australia it is necessary to set aside representative areas of all environments in their natural state.

In Western Australia, it is considered that 50,000 acres is the minimum size for a reserve which will continue to harbour a full range of plants and animals without being altered drastically by external influences. In practice, it is not always possible to obtain reserves of this size (out of over 400 fauna and flora reserves only 10 are over 50,000 acres) and reserves smaller than this need careful management (see S.W.A.N.S., Vol. 3, No. 2, pp. 41 45).

How then are reserves acquired? Why are some reserves chosen in preference to others? Who surveys the prospective reserves and who makes the decision to create reserves? It is the purpose of this article to answer these and other questions.

The Fauna Research Branch of the Department has thirteen officers who are employed in various fields. Of these, only two officers, Research Officer Norman McKenzie and Technical Officer Ken Youngson are primarily concerned with the survey and acquisition of reserves, but several other officers actively assist with this work, especially on major surveys such as the Kimberley Islands Survey (see S.W.A.N.S., Vol. 3, No. 2).

Although special fauna surveys are carried out, the majority of decisions as to where to look for suitable reserves are based on general bio-geographical considerations, i.e. suitable habitat. Searching for possible reserves is done systematically and, although suitable random reserves are accepted, in practice the Department looks for large areas of vacant Crown land with clearly defined priorities dependent on the land useage trend at the current time.

The Department is primarily interested in creating reserves in areas which are likely to receive increased useage within the next ten years. With only two officers fully employed on this work those areas which may not be used for many decades cannot be given high priority. Opportunities do arise, however, to study areas which are virtually unexplored (e.g. Kimberley Islands), and although these areas are likely to remain untouched for some time they are given a high degree of priority by virtue of the fact that they have not been subjected to human interference. If they are reserved now then they will remain in their virgin state for all time.

Helicopters are used for survey work in the more remote and inaccessible areas.

Near cities or in agricultural areas where man has already destroyed much of the natural environment, there is an urgent need to fill in the gaps in the reserve system before continued development further reduces the size of available undamaged habitat. The smaller the reserves, the less is their value to conservation and the more expensive and difficult is their management. Acquisition in such areas has a high priority.

The third category of land receiving priority includes areas which are likely to be developed in the next decade. At present, large areas of land can be acquired for conservation in the Pilbarra and the Eastern and Northern Wheat-belt. If reserves are acquired in these areas now they can include a range of habitats which are fully representative of the region and large enough to be almost self-supporting when the surrounding country is developed.

The three types of areas receiving the highest priority are, therefore, as follows—virgin areas, "fill-in" areas in already developing regions, and areas subject to possible human interference in the next decade.

Less consideration is given to areas not likely to be developed in the foreseeable future such as Halls Creek, Marble Bar, Nullagine, Meekatharra and Wiluna.

Once an area has been chosen, a pilot survey lasting a few days is carried out. The purpose of this survey is to compare vegetation and landscape (including soils) with large reserves already held in the area—if any. Should the land be found to contain individual characteristics then a more detailed vegetation and fauna survey is undertaken and a case prepared for the acquisition of the land as a reserve. Such a report will contain a full description of the proposed reserve and include lists of species of plants and animals identified and comparisons with other reserves. The proposal is then put before the Reserves Committee of the Western Australian Wildlife Authority and, if approved (modifications are sometimes made), forwarded to the Lands Department seeking final approval.

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A report of this nature can take up to six months to complete and in the case of a survey involving a large prospective reserve research staff may spend 4,000–5,000 man-hours collecting and preparing the information. Animal specimens collected are forwarded to the Western Australian Museum and plant specimens to the W.A. Herbarium. At present, the basic botanical work is carried out by Research Officer McKenzie, but the Department does have an urgent need for a full-time botanist to relieve the pressure of work on the Herbarium.

Before surveying remote or primitive regions, considerable research has to be undertaken. Geological maps and Museum records are examined, people who know the area are contacted for information and the diaries of explorers (often dating back to the early nineteenth century) are studied to obtain as clear a picture of the area as possible. Sometimes, more than one visit has to be made; for example, the Kimberley Islands are to be visited for the third time in June, 1973. Time and expense precludes too many of these large surveys and sometimes one visit has to suffice, with as many skilled personnel as are available collecting as much as possible, as quickly as possible. Surveys in these remote, relatively uninhabited regions have great scientific value in addition to their purpose—reserve acquisition.

Museum and Herbarium staff collecting specimens of animal and plant life on the Kimberley islands.

In areas which have been subjected to human interference for some time surveys for "stop-gap" or "fill-in" reserves are basically a study of what is left after man has taken his slice of the cake. The object is to acquire as large a representative area as possible, and because large tracts are no longer available, each prospective reserve has to be examined very closely to ascertain its value. Regrettably, there are and will remain, gaps in our representative reserves, because certain plant and animal associations only occur on soils which are agriculturally attractive, and, as a result, have been almost completely cleared; e.g. in the Shire of York and other wheatbelt shires.

It can be seen, therefore, that the acquisition of fauna reserves is a complex affair which is tackled in a very systematic manner in order that as many areas as possible of a suitable size and containing a cross-section of animal habitat, are reserved for posterity. It is true to say that until Mr McKenzie was appointed in 1970 the acquisition of reserves had been a rather haphazard affair. Even now with the limited staff and finance at the Department's disposal the situation is far from ideal. However, by working strictly in order of priority in obtaining representative selections of habitat type, it should be possible to slow or even halt the decline in our animal populations which started as soon as the white man set foot in Australia. Let us not forget that man was the first predator. Recriminations against the irresponsible actions of previous generations are useless, but the present generation, better educated and more aware of the environment, will be held responsible by future generations if they destroy what remains of our heritage.

Research Officer N. McKenzie—three weeks in the field does nothing to improve one's appearance!

ACQUISITION OF LAKE MUIR AS RESERVE

Just prior to S.W.A.N.S. going to press the Department was delighted to hear that it had acquired Lake Muir and its surrounding fresh water swamps and lagoons as a reserve vested in the Western Australian Wildlife Authority.

Lake Muir and its surrounding wetland areas are situated 40 miles east of Pemberton and cover an area of 10 400 hectares. They are to be maintained in their original state because of their importance as waterfowl refuges. Aerial surveys during summer months have shown large resident waterfowl populations.

A more detailed article with photographs and a map will be published in the next issue of S.W.A.N.S.