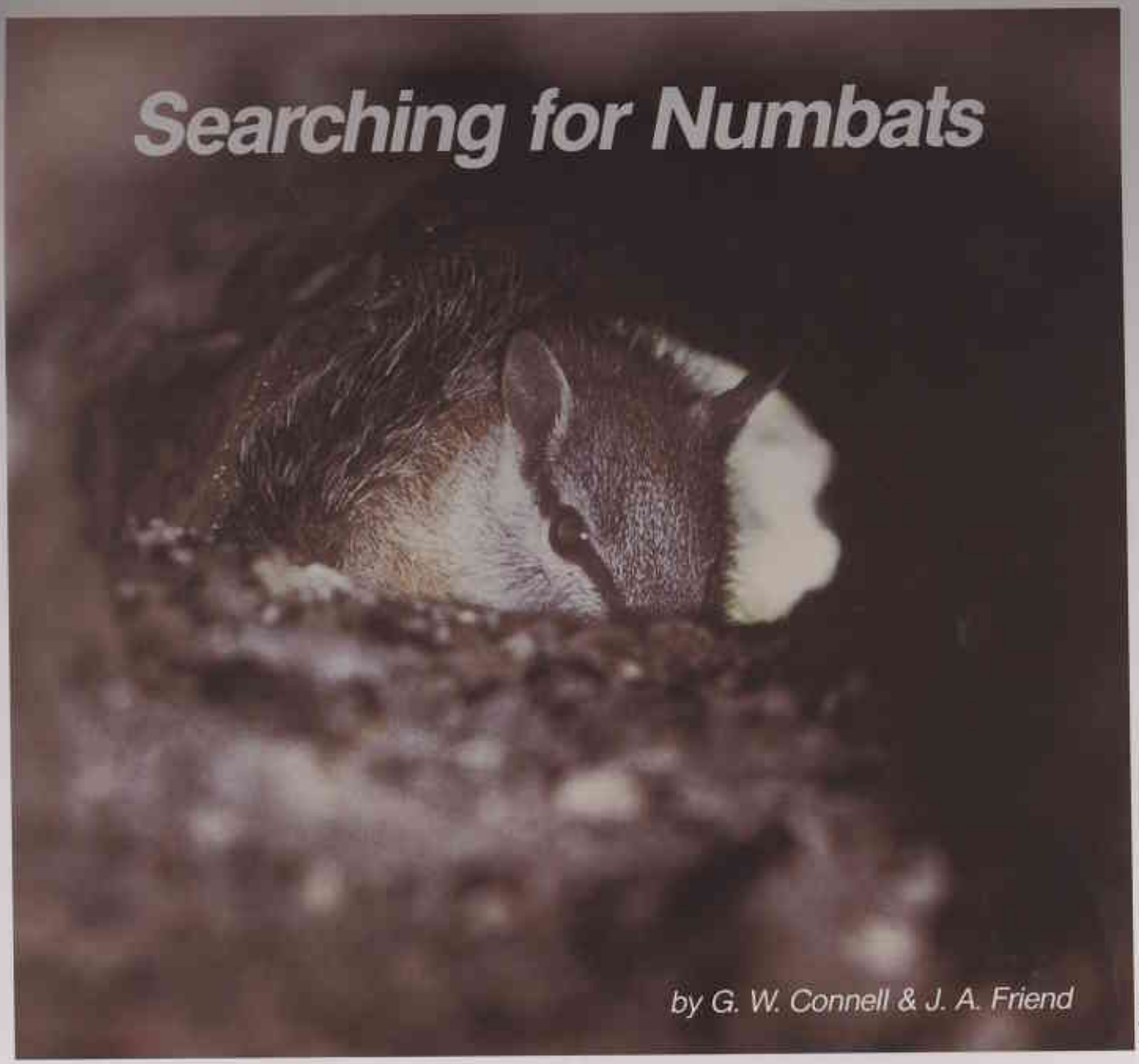
Searching for Numbats



by G. W. Connell & J. A. Friend

A G Wells

The numbat *(Myrmecobius fasciatus)* is a small unique marsupial, which is seriously threatened with extinction. Although the numbat is Western Australia's mammal emblem, few people have seen one alive. Formerly the numbat was widespread, occurring from the south-west of Western Australia through Laverton and the Warburton Range, the Everard Range in northern South Australia, to south-western New South Wales. Since the advent of European man, the numbat has disappeared from most of its former range.

The last known specimen from NSW was collected in 1857, and in South Australia it has not been recorded since 1933 when it was reported near the Everard Range[1]. By the 1950s the numbat was known to occur only in the south-west of Western Australia. In 1960 Dr John Calaby[2] reported that it was limited to the wandoo woodlands of the Western Australian wheatbelt (see Fig. 1), and attributed the decline of the species in the south-west to land clearing for agriculture. Within the region, however, the numbat was widely distributed and locally abundant, and Calaby concluded:

> ... there seems to be no reason why the numbat should not persist indefinitely. It occurs on a number of forestry and water catchment reserves [and] ... also lives in bush blocks on private property.

Figure 1.

Estimated range of numbats in Western Australia in 1960

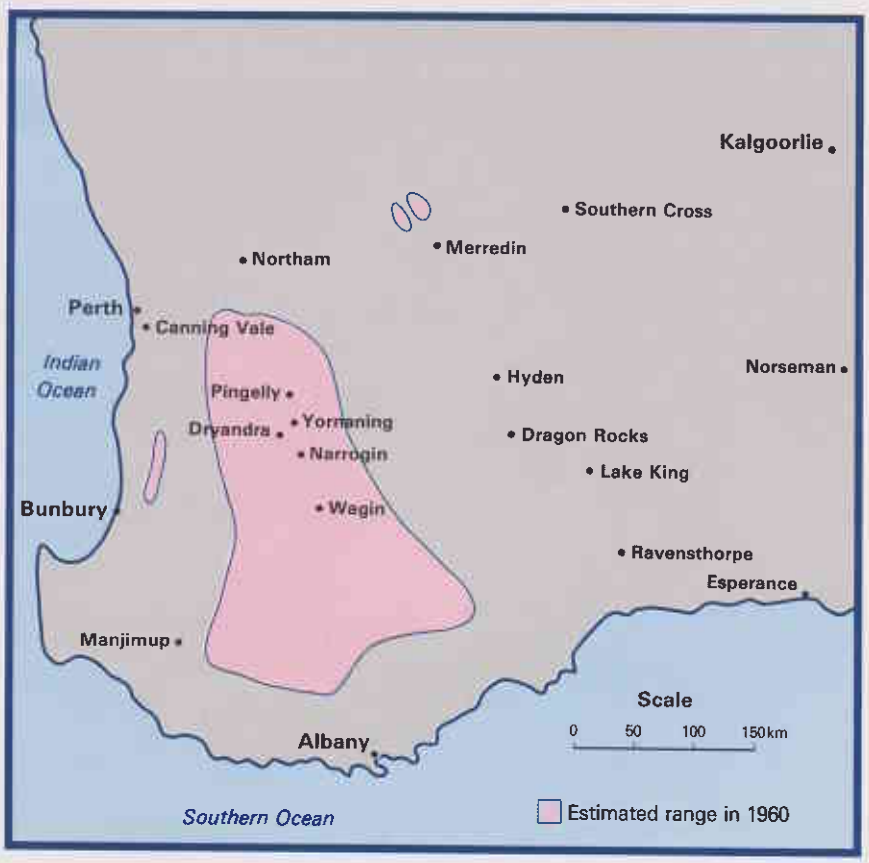


Figure 2 *Extract courtesy Midlands Telegraph 5/7/84*

Where have all the numbats gone?

MOORA: The WA Wildlife Research centre is asking for assistance from local residents in their efforts to locate one of the State's rare residents, the numbat.

Selected as the mammal to represent the State on a state emblem in July 1973, the research centre now believes the small creature is in danger of becoming extinct.

A decline in the number of numbat sightings in the 1970's, first drew the research centre's attention to the problem.

Local officer with the Wildlife and Fisheries Department, Bernie Haberley, said numbats had been found along the costal region, and it is quite possible they are in the Moora wildlife district.

Given the facts on the distribution and life style, biologists with the Department of Fisheries and Wildlife, believe they will be able to recommend management procedures to safeguard the numbat's future.

Described as slightly smaller than a rabbit, with a head and body measurment of 25cms and a tail of 17cms, the numbat can be easily distingished by its long sharp nose and pointed upright ears.

Local residents are requested to record any numbat sightings to Dr Friend, or Mr Connell, of the WA Wildlife Research Centre at Wanneroo either by writing or by phoning (09) 4051555.

Living on a termites diet, WA's mammal emblem the numbat is now considered an endangered species. Local residents have been requested to assist conservation measures, by reporting any sightings to the WA Wildlife Research Centre.

However, in the mid-1970s a dramatic decline in the frequency of numbat sightings was noticed[3]. This decline caused such concern that in 1979 a four-month survey was carried out by the Department of Fisheries and Wildlife to determine the status of the numbat population in Western Australia. A reduction in density over the entire range was reported[4]. The survey noted, however, that there was evidence of numbat occurrence in very low densities in the northern jarrah forest and in the mallee regions of the Lake King-Ravensthorpe area. In 1981, following this survey, an intensive long-term study of the numbat's ecology was initiated[5,6] to provide information as a basis for management of the species. Some research was also carried out in the southern part of its range[7,8].

With increased knowledge of the numbat's ecology, research is now being directed towards effective management of the species. In order to ensure long-term survival, any management plan for the numbat must be based upon knowledge of the species' current distribution. To this end an intensive survey of the south-west was carried out in 1984 to examine areas of possible occurrence for evidence of numbat presence[9].

Publicity

The numbat is active only during the day and is very mobile[5,7,8]. Consequently, sightings by the general public, naturalists and forestry workers, though infrequent, do occur. In order to utilise this hidden source of information, an extensive publicity campaign was carried out in the early stages of the survey.

During the publicity campaign 14 metropolitan and country newspapers published articles containing general information on the numbat, and made an appeal to the public to report

any recent or historical sightings. Figure 2 shows the newspaper article published in the *Midlands Telegraph* on 5 July 1984. Most newspapers also published a black and white photograph of a numbat with the article to aid identification.

The news media exposure of the survey proved to be highly successful, and resulted in 56 possible numbat sightings being reported by the general public. All persons who reported numbat sightings were interviewed, initially by telephone and then in person, to obtain further details. Each person was asked to provide information regarding precise location, date, time, and a description of the animal and its behaviour. During the interview, skins of various mammals occurring in the south-west were shown and the informant was asked to identify which specimen most closely resembled the animal seen.

Field Survey

Previous researchers have identified wandoo woodland and jarrah forest as being prime numbat habitat[2,5,7]. With information from vegetation maps, aerial photographs and LANDSAT imagery, areas of possible numbat occurrence could be chosen. Together with information gained from the publicity campaign and the 196 sighting records extracted from departmental files, dating from 1933 to June 1984, sites throughout the south-west were selected for field survey.

Searching for signs of numbats is a slow and time-consuming task. As the numbat is very wary and not often seen searchers must rely on other signs to indicate its presence. The usual method employed was walking slowly through the bush scanning the ground either for the distinctive diggings numbats make in search of termites, or for their easily recognisable scats. These are 10-20 mm long, are black with a smooth hard waxy coating when fresh, and contain large amounts of sand, as well as termite remains.

Numbats frequently use hollow logs for shelter at night and sometimes during the day, especially on hot summer afternoons[5,7]. Examination of these logs will often reveal traces of hair left behind by the numbat and other animals. During the survey a small portable car vacuum cleaner fitted with a length of plastic tubing was connected to a 12 volt battery carried on a backpack frame. This apparatus was used to extract from hollow logs any loose material including parts of termite nests, wood, feathers and hairs. Hairs of all mammals are unique[10], and those collected were used to identify the species which had used the log.

D Whitford

Numbat scats.


J A Friend

Characteristic numbat diggings from the wandoo woodland of Dryandra State Forest.


D Whitford

People were shown a variety of south-western mammals to help their identification of animals sighted.

After 63 field days of patient searching, 16 of the 59 sites examined throughout the south-west showed signs of numbat activity.

Wheatbelt

The numbat was once fairly common in open wandoo woodland in the wheatbelt region. In 1960 Dr Calaby considered it among the more abundant of the small mammals of the south-west. However, the present survey found the numbat to occur in only six locations within the wheatbelt. Most of the area is now cleared for agriculture, with few bush blocks remaining. Furthermore, few of the nature reserves in the area are large enough to contain a viable population of numbats.

The largest woodland area remaining is Dryandra State Forest which contains a well-researched, large, self-perpetuating population. Yornaning water reserve, where two sightings and other signs of numbat activity have been noted in recent years, is sufficiently close to Dryandra for the forest to act as a source of new colonisers for the reserve. It is known from recent research that young numbats when first becoming independent will sometimes travel up to 15 km before settling into new home ranges.

In the past numbats were seen frequently on Tutanning Nature Reserve, east of Pingelly. Since 1980, however, only two sightings have been made. The present survey found numbat signs at two locations within the reserve. The population, while still surviving, appears to be small and may be in danger of becoming extinct in the near future. A similar fate seems likely for the populations at two other locations in the Pingelly area. Both of these bush blocks are small in area and have provided only one sighting report each since 1979.

The only other locations with evidence of numbats are two adjacent nature reserves on Brookton Highway east of the main State Forest block. Sightings have been made here irregularly over recent years. Although the reserves are small, they are close to the State Forest which could act as a source of colonisers.

Numbats frequently use hollow logs for shelter. Here a researcher vacuums the log to retrieve traces of hair left behind by the numbat.

D. Whitford

J. A. Friend

Eastern Wheatbelt

Historically, no specimens of numbat have been collected from this region, but in 1961 a numbat was reported from the mallee country halfway between Hyden and Norseman. Then in the early 1970s they were reported in the Dragon Rocks area. Also in 1972 and 1979 numbats were sighted near Ravensthorpe. Despite some recent reports from the public and an extensive field survey of the area, no confirmed records of numbats have been made in the region since 1979. We have concluded that the numbat no longer persists in this region.

Jandakot-Canning Vale

The presence of numbats on the Swan Coastal Plain was first indicated by two reported road kills on Nicholson Road, Canning Vale, in the early 1970s. Since 1981 a further six reports of numbats have come from this area, three of which have been road kills along

Wandoo woodland, often regarded as 'ideal' numbat habitat, has become scarce through widespread clearing for agriculture.

Forrest and Armadale Roads. The area is predominantly banksia woodland and this appears to be the only population of numbats persisting in lightly wooded habitats, despite the former widespread occurrence of the species in non-forested areas[11].

However, it is uncertain if a viable population does exist in the area, although signs were found during the survey indicating numbat activity. The amount of urban development and level of human activity in the area suggests that sightings would be more frequent if a numbat population of any size existed. There is a clear need for a detailed survey to determine the range and number of numbats in the area, and the probable impact of future development upon the population.

Northern Jarrah Forest

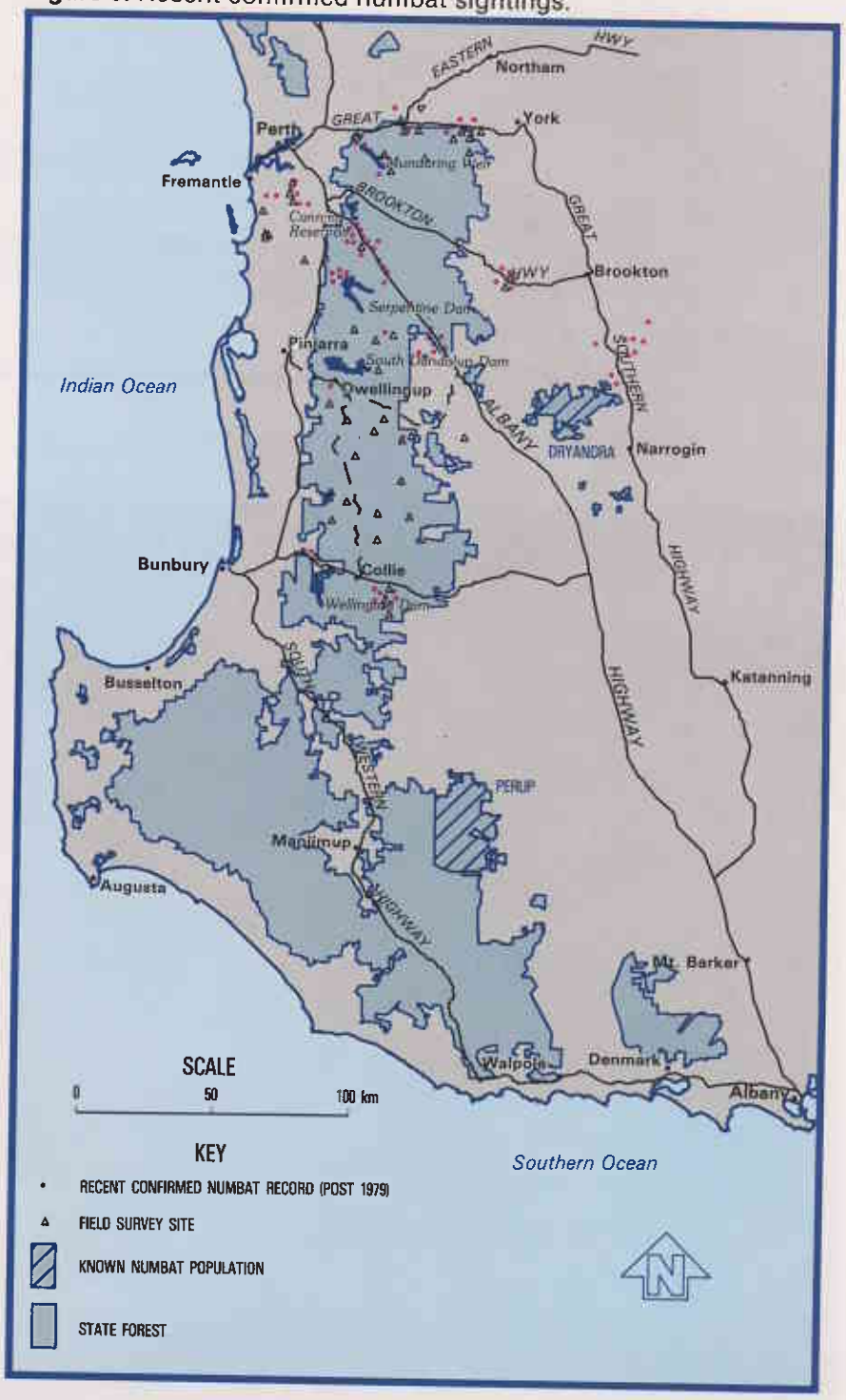
Previously it had been considered that the jarrah forest was unsuitable habitat for the numbat[2]. However, recent research in the Perup[7,8] and the survey carried out in 1979[4] showed that the numbat does inhabit jarrah forest. During the present survey 70 reports of numbats in the northern jarrah forest, dating from 1960 to 1984, were collected from departmental files and the public. Forty-nine of these sightings have occurred since 1979 (see Fig. 3).

The distribution of the numbat within the jarrah forest appears to be discontinuous and restricted to localised populations. There is no evidence of numbat presence from large areas of the forest, despite frequent visits by forestry workers and searches carried out during the present survey.

It has been suggested that logging operations enhance jarrah forest suitability for the numbat[7]. However, the density of the understorey vegetation seems to determine occurrence at a given site. Within the northern jarrah region numbats occur in the drier, open understorey areas near the northern and western boundaries. They appear to be absent from the high rainfall, dense, closed forest of the central area. The patchiness of populations is borne out by the clusters of sightings along the Albany Highway (Fig. 3). Also, the infrequency of sightings along a busy highway indicates a low population density.

Despite the possibility that they may be found more widely in the jarrah forest, the fact remains that the numbat's distribution in the south-west has declined drastically in the last 30 years. This is clearly due to the extensive and almost complete destruction of their former habitat in the wheatbelt. In this context, the remaining high density populations at Dryandra and the Perup assume a greater importance.

Figure 3. Recent confirmed numbat sightings.



The presence of numbats in the northern jarrah forest enhances the security of the species, but more information is needed on the extent of this population. This will enable management of the forest to give the greatest chance for survival to this beautiful little animal. We appeal to anyone seeing a numbat in the wild to contact the Department's WA Wildlife Research Centre at Woodvale with details of the sighting.

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Cover — Looking west over Groper Bluff towards Cape Riche on the south coast of Western Australia.

Harmony of nature and civilization: mother and joey on the lawn in the morning light seem to symbolize . . .

The

No other national park reflects the changing attitudes to conservation and land management over the years than does Yanchep, 53 km north of Perth on the coastal plain, and one of the oldest of WA's parks. Established in 1903 for 'Protection and Preservation of Caves and Flora and for a Health and Recreation Pleasure Resort', Yanchep reveals a series of developments that are generally not contemplated in national parks being established today.

Entrance to the park immediately gives the visitor an impression of a garden. Graceful lemon-scented gums, planted by children as an Arbor Day tribute