Our Diminishing Heritage

The Tammar *(Macropus eugenii)* is a small wallaby weighing about 10 lbs and in general appearance resembles a small kangaroo. It was first recorded by Francisco Pelsaert in 1629 and thus has the distinction of being the first-known Australian marsupial. In those days tammars were found in southern South Australia; Western Australia from Geraldton to Esperance; and on a number of off-shore islands, but their range on the mainland, like that of so much of our native fauna, has been steadily reduced by the clearing of the mallee and scrub woodland which forms their ideal habitat.

In order to survive and reproduce, tammars require specific habitat conditions. The major requirement is cover, not only for protection from the elements but also because they rely on sight and sound for warnings of danger. Away from this cover tammars are extremely vulnerable to predation by any fast-moving terrestrial animals or by eagles. During daylight and when they are not feeding at night they restrict their movements almost completely to areas of suitable cover. This cover consists of low to medium-height closed canopy vegetation which provides shelter, is not readily or quietly penetrable, and thus provides an early warning system for the tammar. One such type dominated by a species of Casuarina is known colloquially as "Tammar scrub".

Tammars differ from most other small wallabies in that they are specialised for life under dry conditions. In their habitat fresh water is often unavailable for long periods, and during the summer droughts food plants shrivel and wither. Those tammars which live on islands may, therefore, have to supplement their water intake by drinking sea-water. Research has shown that tammars from the Abrolhos Islands have the most effective kidneys of all those marsupials which, so far, have been the subject of extensive scientific study, and it has been discovered that these tammars can exist on sea-water for long periods, though not indefinitely.

A further interesting feature of the tammar concerns breeding. If a tammar mates just after giving birth then the resulting embryo lies dormant while the first young is suckled in the pouch. This is known as delayed implantation or embryonic diapause, and is a phenomenon known in other species (e.g. the Red Kangaroo), but in tammars the delay can be as long as 11 months—the longest recorded in any mammal.

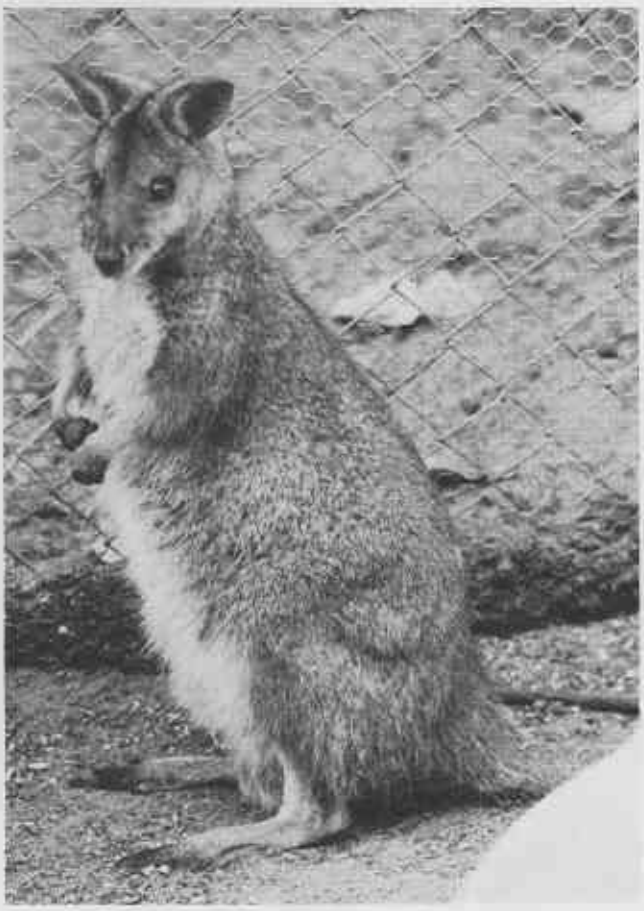
The populations which survive on offshore islands, together with the remaining mainland pockets present a range of habitats which allows comparative studies to be undertaken. A great amount of valuable research has already been done, but much remains to be learnt about the tammar in order to assist the formulation of management plans for the conservation of the species.

Management of the tammar is vital because human interference with the habitat has isolated the mainland populations. Until recently all the island populations had been thought to be relatively secure, but the proposed development of Garden Island as a naval base has necessitated a close examination of all the proposals and the effects they may have on the tammars. Research to date suggests that the tammar habitat on Garden Island could be slightly reduced without causing the species to become extinct there. However, it is not possible to say exactly what area must be left to ensure continuance of the species on the island. It is thought that a reduction to about 1,000 acres would put the species on the knife-edge of survival, and that two or three hundred acres either way might mean the difference between survival and extinction. If the area is too small the tammars would probably die out sooner or later because a small population would have insufficient genetic resources to withstand disease and other harmful ecological factors.

It is known that each tammar requires approximately 4½ acres of suitable territory in order to survive, and habitat must include sufficient plant cover of suitable height and density and sufficient food throughout the year. Tammars held in captivity have shown that the species will not breed unless some cover is provided, be it only a few trees and logs. Paradoxically, the clearing of

TAMMAR

Macropus eugenii



DISTRIBUTION:

South-western Australia (including Houtman Abrolhos, Recherche Archipelago), S.A. (mainland, some offshore islands including Kangaroo Island).

LOOKS:

Resembles small kangaroo.
General colour dark brown.
Faint dorsal stripe descending no further than mid-back.
Upper lip—white.
Throat, chest and belly—white.

HEIGHT:

Male, Female } about 2 ft.

WEIGHT:

Male: 5.85 k (about 13 lb; from Garden Island population sample.)
Female: 4.3 k (about 9½ lb; from Garden Island population sample.)

BREEDING:

Mating season (Garden Island) from middle of December to middle of February.
Development of young can be delayed in the uterus if a joey is being suckled in the pouch.
One joey per year is produced, unless delayed implantation takes place.

DIET:

Tammars are grazing and browsing animals eating mainly shrubs and perennial grasses.

the tammar's natural habitat for roads and firebreaks has some beneficial effect since the animals feed on the regenerated vegetation along the verges. But any excessive clearing and reduction of the habitat would be catastrophic.

More information is needed on the population dynamics and behaviour of tammars, but enough is known for it to be clear that constant monitoring of the habitat and the populations must form the basis of any management plan for the tammar on Garden Island.

Tammar habitat on Garden Island