

The Mottlecah – A Plant in Need of a Place to Grow

With its large grey leaves and crimson flowers, the Mottlecah (*Eucalyptus macrocarpa*) is one of the most striking ornamental mallees in the Western Australian wheatbelt. A recent survey located 191 populations of this plant distributed through 18 Shires over a maximum range of 500 kilometres. However, of these, less than seven percent occurred in Nature Reserves or National Parks. The greatest number of populations occurred on road verges and private land, and the majority of individual plants also occurred on private land. Much of the emphasis for the conservation of these plants in their natural habitat

therefore must be placed on the owners of private land and the general public.

Eucalyptus macrocarpa was first noted in 1840 by botanist James Drummond who described it as "a shrubby *Eucalyptus* with large glaucous (coated), coriaceous (leathery) foliage and conspicuous red flowers, succeeded by large seed-vessels."

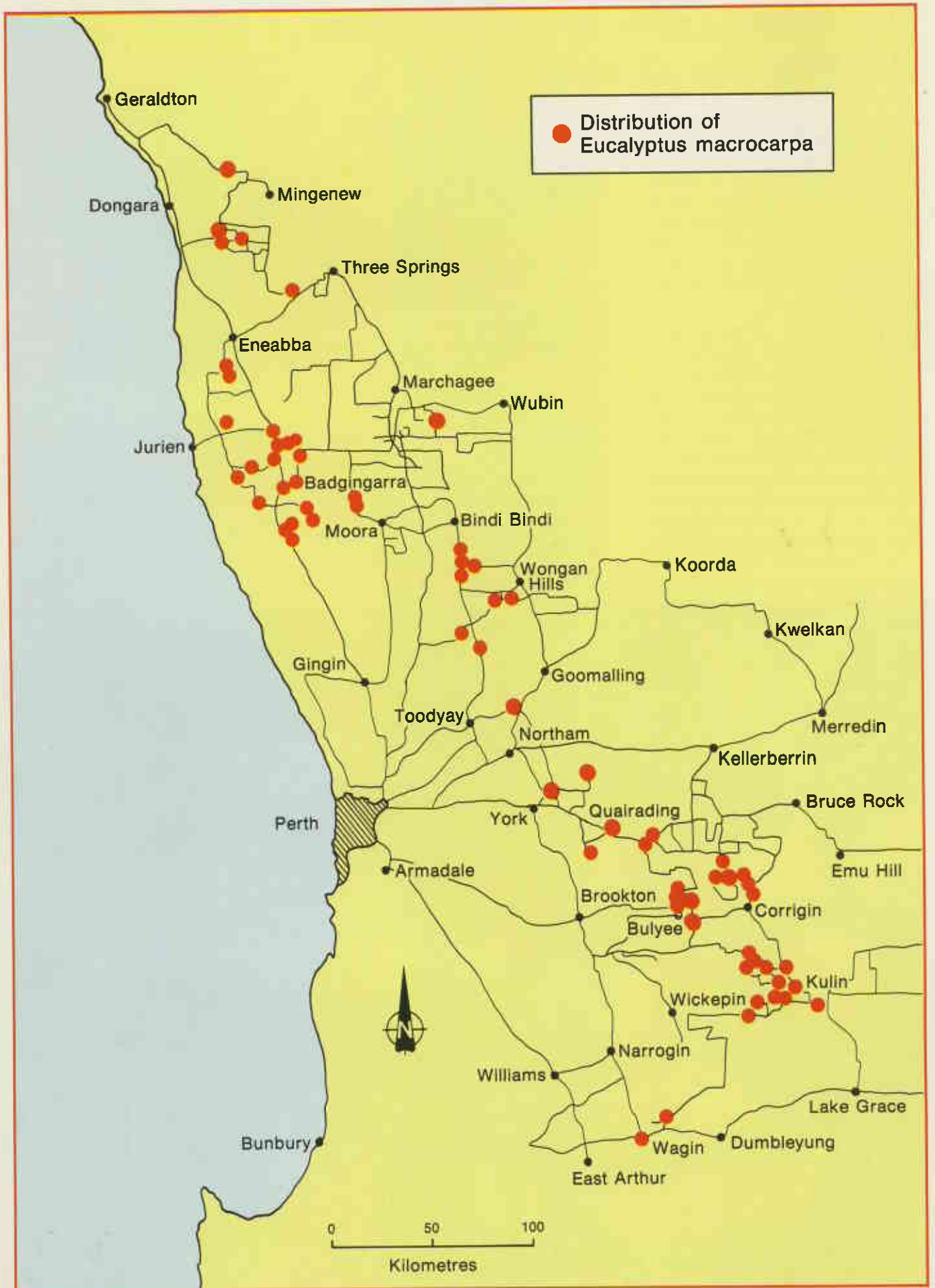
A scant 48 years later, the species was considered threatened by new settlers and in danger of disappearing forever. Botanist F. von Mueller claimed "as this bush is only sparsely distributed in its own region, it is to

be feared, that, in course of time, by the methodic burning-off to which the scrublands are subjected by the settlers, it will pass altogether out of natural existence like so many other local plants of Australia, to make space for the upgrowth of pastoral vegetation." In addition, von Mueller said *E. macrocarpa* had "claims for ornamental culture, especially when scenic effect was desired, as the flowers were so large and handsome, while the ashy grey of the foliage contrasted remarkably with the ordinary green of shrubberies."

Fortunately von Mueller was inaccurate with his forecast that this species would disappear. However, it is still in danger and will need particular attention to ensure its future survival.

▼ The Mottlecah (*Eucalyptus macrocarpa*) has the broadest fruits and largest flowers of the Eucalypts.





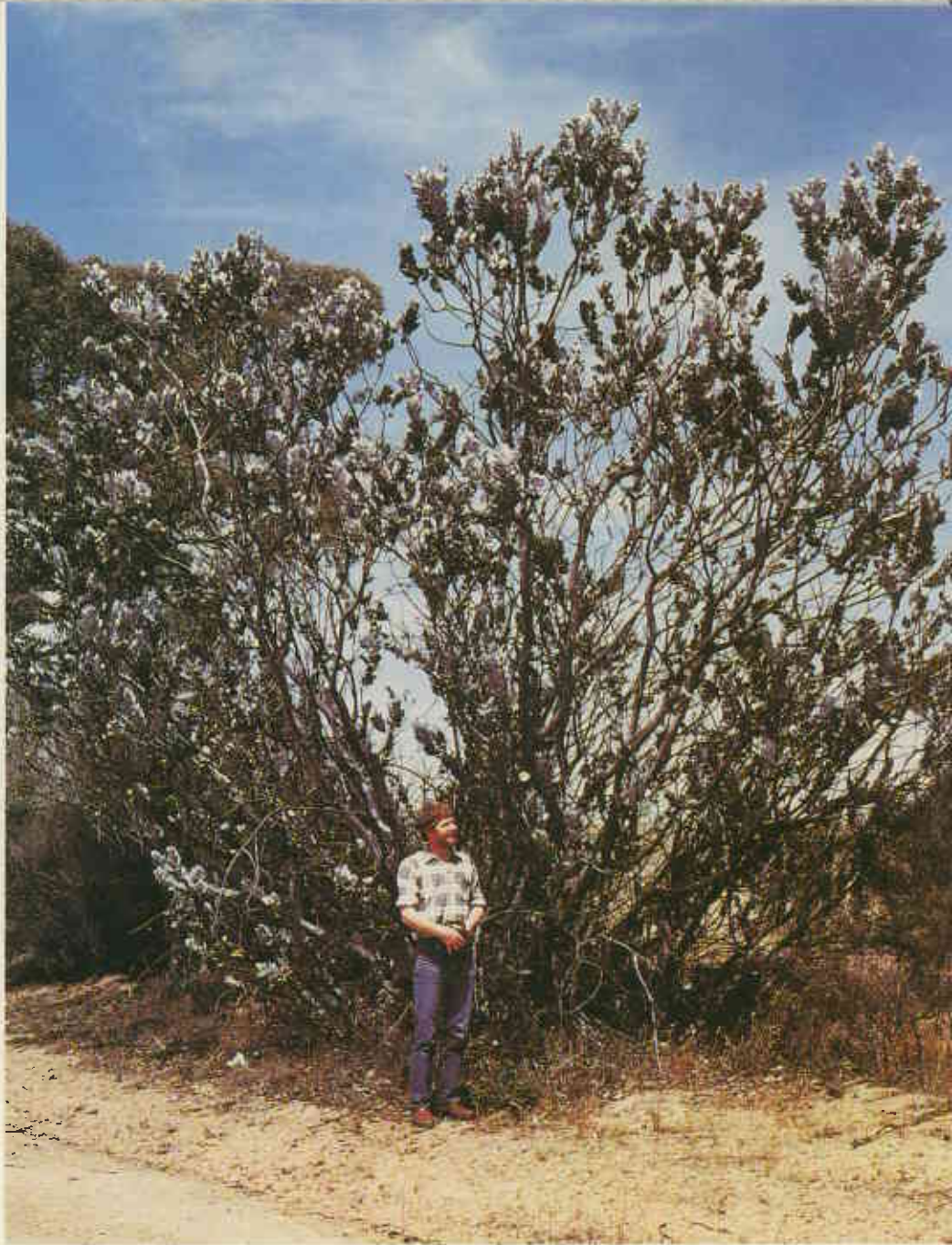
In addition to its ornamental beauty, *E. macrocarpa* is of considerable botanical interest, having the broadest fruits and largest flowers of the eucalypts. Although some geographical variation in size is evident, the plant's flowers can be as large as eight centimetres in diameter. Most flowering takes place between late winter and early summer. Despite the size of its flowers and fruits, the plant itself grows no taller than about five metres and is often considerably less.

The range of the plant is limited, extending in a relatively narrow zone of open sandheath from just north of Geraldton, via the Hill River, Piawaning, Meenaar, Tammin and Bruce Rock to Kulin, where it usually occurs in small patches (Gardner 1979).

Chippendale (1973) provided a small map indicating that *E. macrocarpa* extended in a narrow belt from Geraldton south-south-east to Pingelly, with outlying north-easterly populations in the Mullewa district.

A survey detailing *E. macrocarpa*'s geographical variation was carried out between June and October last year by S.D. Hopper, T.J. Fetherstonhaugh and N. Caputi. Twenty-five populations throughout the plant's range were sampled for morphometric analysis. The largest leaf, fruit, bud and flower were collected from up to 20 plants on a linear transect in each population and a total of 31 measurements were made on each plant whenever possible. These included five leaf dimensions, plus an estimate of leaf glaucousness, 13 fruit dimensions, five bud dimensions, six flower dimensions and plant height. The results will be detailed in a report currently being prepared by the Department of Fisheries and Wildlife (Geographical Variation and Conservation Status of *Eucalyptus macrocarpa* and *E. macrocarpa* x *pyriformis* Hybrids).

In addition the number and location of each population was plotted onto cadastral maps of the Western Australian Department of Lands and Surveys so that land



▲ Although many of the plants grow to considerable sizes, (as in the above photograph) others never grow larger than shrubs (See below) — Photo S. Hopper. ▼





▲ A hybrid species, *Eucalyptus macrocarpa* X. *pyriformis* shows its large and handsome flowers. — Photo S. Hopper.

ownership could be determined. In this way, the number of populations and plants on private land, road verges, Nature Reserves, National Parks, vacant Crown Land etc. was established (see accompanying table).

A consistent geographical pattern was evident in the distribution of population means in all analyses. Populations in the so-called near coastal northern heathlands from Moora west to Cataby and north to Mt Horner were, with few exceptions, differentiated from inland populations occupying the central wheatbelt from Piawaning south-eastward to Wagin and Kulin.

These “nothern heathland” and “central inland” races were distinguishable in a number of characteristics. Northern heathland plants were usually smaller in stature, they had fruits smaller in diameter with staminal rings and discs that projected less above the rim, they had longer pedicels, and their leaves were shorter, more rounded and less glaucous. However, there were some populations with intermediate characters between the two races.

It was also found that the northern heathland race was far less common than the central wheatbelt race, being represented by only nine percent of the total individuals counted and 25 percent of the known populations.

As a result of the survey, the Department of Fisheries and Wildlife has lodged several applications for land to be set aside as Nature Reserves at sites where suitable populations of *E. macrocarpa* occur, particularly the northern heathland race. Where populations or individual plants occur on private land, the owners will be asked to exercise due consideration to the plant's future conservation.

NUMBER OF POPULATIONS

	Northern heathlands race	Central wheatbelt race	Total
Crown Lands			
i) Conservation Reserves	3	10	13 (6.8%)
ii) Road Verges	25	58	83 (43.5%)
iii) Other	5	16	21 (11.0%)
Private Lands	14	60	74 (38.7%)
Total	47 (24.6%)	144 (75.4%)	191

NUMBER OF PLANTS

	Northern heathlands race	Central wheatbelt race	Total
Crown Lands			
i) Conservation Reserves	100	2117	2 217 (14.9%)
ii) Road Verges	510	1871	2 381 (16.0%)
iii) Other	204	2406	2 610 (17.6%)
Private Lands	545	7126	7 671 (51.6%)
Total	1 359 (9.1%)	13 510 (90.8%)	14 879