FLORA

# NORTHERN WHEATBELT FLORA SURVEY

*Stephen Davies*

Between 1999 and 2002 I had the pleasure of working with local landowners and Landcare staff in surveying the flora of private remnants in the northern wheatbelt of Western Australia. The Landcare Districts of Latham, Marchagee, Mullewa, Waddy Forest and Wilton Well span a fascinating transition zone of the State's flora, with such south-western plants as kangaroo paws in the south and west and arid zone shrubs, mulga and bowgada, in the north and east.

Remnant vegetation on private land is scattered throughout these areas. Although many of the government reserves have been surveyed, very little systematic work had been done on private land. In all, 170 sites were visited and over 2000 specimens identified. Many of these specimens were the same species collected in different Landcare Districts, so the total number of plant species recorded was about 1000. This still represents significant biodiversity in the region and emphasises the importance of private remnants in preserving that biodiversity. In each of the Landcare Districts at least some of the Declared Rare Flora and Priority 1 species were located, for example *Chamelaucium repens*, creeping darwinia, in Mullewa, *Hensmania chapmanii,* Chapman's hensmania, in Wilton Well, *Eremophila vernicosa* in Marchagee and *Frankenia bracteata* in Waddy Forest. Several of these were known to the landowners but their significance was not. One rare plant, *Chorizema humile,* prostrate flame pea, was the subject of a special survey, because the Waddy Forest area had turned up a very large, unrecorded population. The follow-up survey recorded another nine populations, each small but significant in representing further genetic diversity.

Many of the remnants were unfenced, but the survey, which involved the landowner wherever possible, stimulated further fencing efforts, supported by Natural Heritage Trust grants, once the value of the remnants was documented. It was especially interesting to find that many plants rarely collected and therefore considered rare, grew in the salt creek systems. These areas are regarded as infertile in farming circles, and also perhaps in botanical circles. The situation is reminiscent of the arid zone, where *Acacia pruinocarpa,* gidgee, the largest acacia in the inland, was uncollected and therefore undescribed until 1958 because no good botanist would go to the arid zone in mid-summer! In the same way the salt creek systems are a neglected resource. Because they are little used by farmers, they are less disturbed than fertile areas and will yield many interesting specimens when adequately collected. In another way they are very important because they form long, undisturbed corridors traversing the countryside, enabling animals and to some extent plants, to disperse through otherwise hostile landscapes.

Observation on the survey illustrated time and again destructive effects of high rabbit and kangaroo populations. Even in remnants fenced with ringlock and equivalent netting to exclude stock, there was little regeneration. Most had been eaten by the herbivores that the fencing did not exclude. Farmers are aware of the damage rabbits can do but few seem to appreciate the damage high numbers of kangaroos can cause. Environment Australia surveys the density of kangaroos over the whole of Australia every three years. These surveys show that the density of kangaroos in undisturbed woodland is 0.86 (1) per square kilometre. In the Inering Catchment east of Carnamah, I have measured densities of 62 grey kangaroos per square kilometre of remnant. No regeneration can sustain such densities of grazing animals. The reason I emphasise areas of remnant is that kangaroos feed on clover and other pastures in the winter, the season when, before farming development, they were short of food, but are now well fed. In the summer they feed on the young green plants in the bushland, that is the regenerating seedlings, wiping them out if the kangaroo (or rabbit) density is high. Where plants like *Chorizema humile* are protected by bird netting (12 mm netting), as at Bindi Bindi and "Koobabbie", Coorow, the main stems survive but any shoot beyond the netting is grazed off in the summer. Until the need is recognised to adequately subsidise the fencing of remnants, particularly those containing palatable rare species, with rabbit netting (30 mm), biodiversity will continue to be lost in many remnants, both those publicly and privately owned.

The surveys have provided a baseline against which to follow changes in the vegetation as landcare practices develop. In the Marchagee and Latham Catchments in particular, survey sites have been marked so that return visits can be made in later decades to measure quantitative changes in floral diversity. Reference points along these lines should be established in other catchments.

Finally let me say how much I enjoyed undertaking the work, meeting and getting to know the farmers, and how grateful I am to those who helped me.

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