FLORA

MISTLETOE - FRIEND NOT FOE!

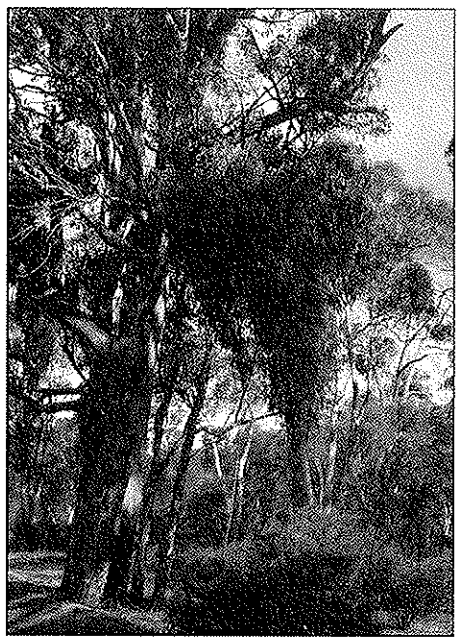
Wendy Bradshaw

If you - like me and many others - thought that mistletoe is a pest species that is killing trees and needs to be got rid of, then the staggering results of research in NSW need to be considered for their relevance here.

Mistletoe is the common name for plants in the Loranthaceae family, which in WA are all aerial hemiparasites with the exception of the WA Christmas Tree (*Nuytsia floribunda*) which is a root hemiparasite. They produce their own sugars from photosynthesis, but also passively take water and nutrients from the host to which they are attached.

Because mistletoes may not be as affected by drought as many other plants, they provide an important food source for many native animals, with extensive flowering and fruiting periods often peaking during the dry season, a time when few other plants can grow, let alone invest their energy in fruit or nectar. Mistletoe leaves are also highly nutritious, and do not contain any nasty chemicals, but instead are full of phosphorous, nitrogen, a cocktail of scarce trace-elements and plenty of water. Mistletoe fruits are exceptionally nutritious, supplying lipids, carbohydrates, and all 10 essential amino acids.

The tropical north of WA boasts the largest number of mistletoes, with around 31 species. Three of the six genera, *Decaisnina*, *Dendrophtoe* and *Diplatia,* are recorded exclusively at the top end. The genera *Amyema* and *Lysiana* occur in all regions, while *Nuytsia* occurs only in the south west. The expansive arid area between the tropical north and the



A large mistletoe on wandoo

temperate south west has around 26 species, and the south west 9 species. Different species have specific preferences for hosts, a few examples in the north being *Ficus*, *Acacia*, *Brachychiton*, *Eucalyptus*, and *Gardenia*, while in the arid and south western areas, *Acacia*, *Eucalyptus*, *Casuarina*, *Melaleuca*, *Santalum*, *Exocarpus*, *Hakea*, and *Grevillea* are favoured.

There are a large range of birds that feed on mistletoe, such as honeyeaters, cuckoo-shrikes, ravens, cockatoos, shrike-thrushes, woodswallows and many more. Mistletoe clumps also provide valuable nesting and roosting sites for a large number of bird species. Herbivorous insects enjoy eating the leaves and they are a favourite food of brush-tailed possums.

A recent study by David Watson in southern NSW*, compared two adjoining fragments of the same vegetation type, of similar size and grazing history. The owner of one fragment had systematically removed almost all mistletoe plants from the property since 1996, using a blow-torch from a trailer-mounted cherry-picker. Twenty one-hour surveys in each fragment over two years revealed 20 % more woodland bird species in the fragment with abundant mistletoe and, more importantly, over 70% of the woodland-dependant bird species (30 of 44) were recorded more often in this fragment, including several regionally scarce species. Despite measuring a whole range of vegetation and habitat variables, no differences between the two fragments other than mistletoe density could be found.

The fragment from which the mistletoes were removed had about eight mistletoes/ha, a density typical of undisturbed woodland, whereas the untreated fragment had about 92 mistletoes/ha, which is characteristic of many fragmented habitats in eastern Australia. Does that sound a familiar story?

David's conclusion from this study is that without the resources provided by mistletoe, the impact of habitat fragmentation is likely to be much more severe. It is suggested that mistletoe only becomes a serious threat to trees when it is in very high numbers and in those situations, it is only one factor in declining tree health.

** Watson, D M 2004, 'Misunderstood Mistletoe' in Wingspan, March 2004, Birds Australia*

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