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BUTTERFLIES IN URBAN BUSHLANDS AROUND PERTH

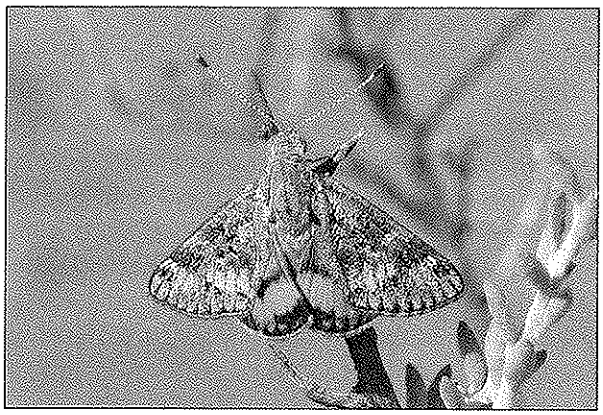
Matthew Williams

In a previous article I discussed the effect of fire on butterflies and some results of the initial surveys I had completed at four sites (*Western Wildlife*, October 2003). This article summarises the results of surveys of 46 suburban bushlands (mostly *Bush Forever* sites) between the suburbs of Casuarina in the south and Kingsley in the north. Full results of these surveys were recently published in a scientific journal*.

To briefly recap, there are 63 species of butterflies in the south-west, and another dozen or so brightly coloured day-flying moths with similar habits that are often mistaken for butterflies. Many butterflies and day-flying moths (collectively referred to as 'butterflies' in this article) are becoming increasingly rare because they are susceptible to local extinction in urban bushland remnants, often as a result of fire and/or the displacement of their food-plants by weeds. Almost all butterfly caterpillars live and feed on the above-ground parts of plants, and so are killed by fire. And despite being able to fly, most butterflies will not disperse across unsuitable habitat to recolonise sites where they have become extinct. For butterflies, remnant bushlands are now 'islands in suburbia'.

*The Australian painted lady (*Vanessa kershawi*) is common in both bushlands and suburban gardens. Its caterpillars eat Capeweed - so not all caterpillars in the garden are bad! (Colour, black, white and bright orange.) Photo: Geoff Walker.*

Overall, surveys between 2001 and 2007 recorded 41 species: 36 butterflies and five day-flying moths. More than 1,000 km of tracks and transects were surveyed, often with the help of volunteers and Friends groups – many of whom contacted me after the earlier *Western Wildlife* article. Over 17,000 butterflies were seen. Among the most common and widespread species were the Australian painted lady (over 5,000 seen!), western xenica (2,000), marbled xenica (1,800), fringed heath-blue (1,300), and, of course, the introduced cabbage white (700). The most rare or restricted species were the large bronze azure, yellow sand-skipper and golden-haired sedge skipper (each was found at only one site each, although all have much wider distributions in the south-west), as well as the declared endangered graceful sun-moth, which was found at only five sites.



This sun-moth, from inland WA, is very similar to the endangered graceful sun-moth. Most species have brightly-coloured red or orange hind wings and dark forewings. Photo: Matt Williams.

The sightings of the graceful sun-moth were particularly important, because this endangered species only occurs on the Swan Coastal Plain between Mandurah and Quinns Rock, where it is threatened by clearing for urban development. Several sites where it had been recorded in the past (such as at Mandurah, Crawley and Fremantle) have since been cleared. It was recently declared Endangered under the Federal EPBC Act, based on earlier listing by DEC. On one exciting day in March 2004, Phyllis Robertson and I saw a female sun-moth laying eggs at the base of *Lomandra hermaphrodita*, confirming this as a food-plant (most butterflies and day-flying moths have caterpillars that are very specific in what plants they will eat). Subsequently, *Lomandra maritima* has also been found to be a likely food-plant, and other species of *Lomandra* mat-rushes may yet prove to be food-plants. This helps with conservation of the species because it enables us to determine from flora surveys if sites proposed for clearing are likely to contain populations of the sun-moth. This is very useful information because the graceful sun-moth is only active in March each

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Butterflies

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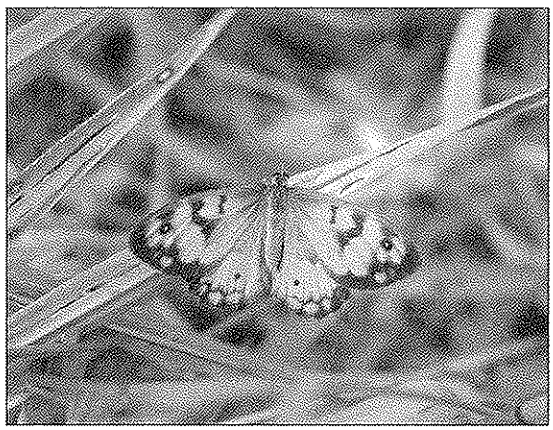


*The western xenica (*Geitoneura minyas*) is one of few native butterlies that have benefitted from disturbance, and is now very common. Photo: Andy Williams.*

year, and is more difficult to find than its food-plant, so sites where the food-plants are present or common can be targetted for surveys.

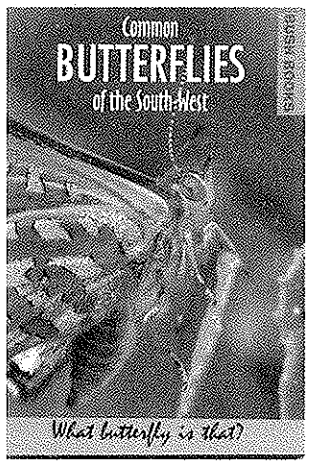
The number of species found at each site was highly variable – between one and 28. The most important factor in determining how many butterfly species were in each bushland was the proportion of the vegetation in 'very good' or better condition, based on the *Bush Forever* rating system. Perhaps surprisingly, the size of the bushland remnant was of lesser importance. Many 'smaller' bushlands, those around 10 ha or less, still contain several butterfly species including some now quite rare in the Perth metropolitan area. For example, Cottonwood Crescent and Errina Road bushlands still contain populations of the western brown skipper, blue iris-skipper and the spring sun-moth. These species were notably absent from some of the largest reserves surveyed, such as Kings Park and Bold Park.

*The fringed heath-blue (*Neolucia agricola occidens*) is common in most bushlands. It can be recognised by its brown wings with white chequered edges. Photo: Geoff Walker.*

In contrast, a few native butterflies are now more common in disturbed sites. These are a small minority of species that have adapted to introduced weeds, such as veld grasses. For example, the western xenica was probably quite rare on the coastal plain before these weeds were introduced, but is now one of the most common species of Perth bushlands and elsewhere in the south-west. It is extremely abundant in some places, such as near Camel Lake in Bold Park, where hundreds (if not thousands) can be seen flying each October.

Of all the study sites, Koondoola bushland had the most species. Many butterflies that are very sensitive to disturbance, such as the western jewel, blue iris-skipper, large bronze azure, mallee ochre, and the western and large brown skippers, still occur at Koondoola. And no western xenicas were seen in the northern part of the bushland, testimony to the good condition of this area.

If you plan to seek out our native butterflies this spring, the results of the surveys can offer some tips for finding them. First of all, butterflies are most common between mid September and mid December. Sunny days with maximum temperatures between 23 and 30 °C are ideal, especially if not windy. They are most active between 9.30 am and 3 pm, depending on temperature (late morning is typically the best time, especially on warmer days). Don't be surprised if you don't see many butterflies in September or early October – many species don't really get going until it warms up in mid October and early November. A few species, such as the graceful sun-moth and wedge grass-skipper, can only be seen between late February and April. Autumn is also the best time to see females of the western brown, although males are only around in November and December – but that's another story!



DEC has published a new Bush Book, *Common Butterflies of the South-West*, which describes and illustrates 31 of the most common species in the region. Almost all of the butterflies to be found in suburban bushlands around Perth and the major regional centres are covered by the book. A follow-up book on the other 32 species found in the south-west is almost completed and together they will provide a complete guide to the butterflies of the south-west.

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