



## Graceful Sun-Moth (*Synemon gratiosa*)

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### Background

What are sun-moths? Sun-moths are moths that are strictly diurnal (fly during the day) and typically only fly in bright sunshine, during the hottest part of the day. Because of these features they are often mistaken for butterflies. Whereas most night-flying moths have 'feathery' antennae, butterflies and sun-moths have slender, clubbed antennae. However, like almost all other moths, sun-moths rest holding their wings flat – as opposed to butterflies, which hold them up above their bodies like a sail. Sun-moths are well camouflaged when settled, displaying only their black-brown forewings, but when they fly their brilliant red, orange or yellow hind-wings are exposed and they are easily recognized. There are 45 species of sun-moth in Australia, with about 30 in south-western Western Australia.



Left: An as-yet unidentified sun-moth species recently discovered in Wandoo NP.

Photo: Jean Hort

Right: A preserved specimen of the graceful sun-moth, showing the brightly coloured hind wings Photo: Andy Williams



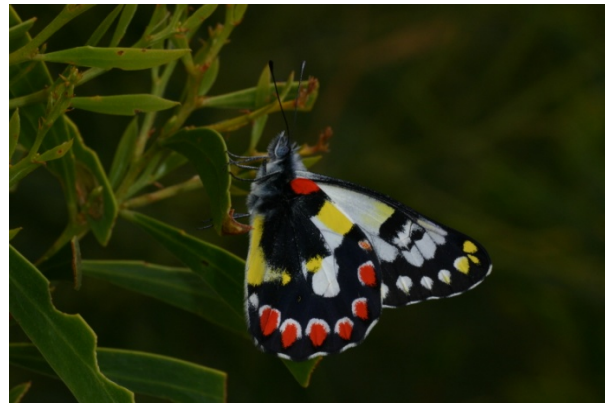
## Findings

Sun-moths are most common in sedgeland, heathland, woodland and sometimes in open parts of the forest where their 'foodplants' (various grasses, sedges and mat-rushes) are found. Most sun-moths only breed on one or two plant species - their caterpillars are adapted to feed only on these particular plants. The graceful sun-moth breeds on two species of *Lomandra* mat-rushes (*L. maritima* and *L. hermaphrodita*). The adult moths fly close to the ground and males are territorial, defending a small open area from fellow sun-moth intruders. They are easiest to observe when perching on dead stems where they bask in sunshine.

The life cycle of the graceful sun-moth (egg - larva - pupa - adult moth) takes two or more years. The eggs are laid at the base of the food-plant and the larvae (caterpillars) live entirely within or alongside the underground parts of the plant. The adult moths live for only two to ten days, but at a particular site the adult moths appear over a four-six week period, between mid February and late March.



DEC volunteer Fred Hort (left) and DEC Senior Technical Officer Andy Williams on the hunt for sun-moths  
Photo: Jean Hort



A spotted jezebel perched with wings held above the body – a typical butterfly posture  
Photo: Geoff Walker

## Management Implications

There is currently a Department of Environment and Conservation (DEC) research project to conserve the Endangered Graceful Sun-Moth (*Synemon gratiosa*), which is mostly restricted to the Swan Coastal Plain. The aim is to identify key habitat for conservation of the species, refine knowledge of its distribution and habitat requirements, and re-assess its threatened status.

The data collected will also help to resolve potential conflict between conservation of this endangered moth and urban development.



A graceful sun-moth in typical resting posture  
Photo: David Pike