

Technical Bulletin # 12

Surveys for Arid Bronze Azure Butterfly



Figure 1: Female Arid Bronze Azure Butterfly lateral basking in morning sunshine. Photo: Fabian Douglas.

This technical bulletin summarises the findings of surveys undertaken in October 2011 and March 2012 on the distribution of the Arid Bronze Azure Butterfly (*Ogyris subterrestris subterrestris*) in the Mallee area of north-western Victoria.

Background

The Arid Bronze Azure Butterfly belongs to the family Lycaenidae. This is a species rich family of small butterflies that often have obligate relationships with various ant genera. The genus *Ogyris* contains comparatively large, robust species and is confined to Australia and New Guinea.

The Arid Bronze Azure Butterfly has an average wingspan of 3.5 cm for males and 3.6 cm for females. The upperside of the wings are a dark dull purple with bronzy brown edges for males, and a brighter purple for females with a whitish spot near the apex of the forewings. The underside of the wings of both sexes are camouflaged in shades of grey.

This species is known from a very few restricted and disjunct localities in the Mallee zone of Western Australia, South Australia, New South Wales and Victoria. In Victoria it has been recorded at Pink Lakes in the Murray-Sunset National Park

At a glance

- The Arid Bronze Azure Butterfly (*Ogyris subterrestris subterrestris*) is listed as a threatened species under the *Victorian Flora and Fauna Guarantee Act 1988*;
- Two populations of the species were known within Victoria; one in northern Hattah-Kulkyne National Park and adjacent private land and one at Pink Lakes in the Murray-Sunset National Park;
- During October 2011 and March 2012 surveys were conducted to monitor known occurrences and locate new populations; and
- The butterfly was found within the northern area of Hattah-Kulkyne National Park and adjacent private land, including one new site in Hattah-Kulkyne National Park. However, it was not located at Pink Lakes.



Figure 2: Habitat for Arid Bronze Azure Butterfly. Photo: Fabian Douglas.

and in the northern part of Hattah-Kulkyne National Park and abutting private land. It was also recorded near the Mildura Cemetery but is now believed to be extinct there.

The Victorian distribution of the Arid Bronze Azure Butterfly is underpinned by the presence of the sugar ant (*Camponotus terebrans*). The butterfly deposits eggs at the entrances of sugar ant nests that abut the base of living trees and shrubs of various species. It is widely believed that the ants either feed the larvae by regurgitating a sugary substance or that the larvae predate on the ant larvae. It is thought that the species completes its development and pupates underground within the sugar ant nests.

Due to its restricted distribution, the Arid Bronze Azure Butterfly is vulnerable to such threats as habitat loss to agriculture, soil disturbance, weed invasion, and ecological succession. It may also be vulnerable to the overall effects of climate change.

The primary objectives of this project were to:

- Monitor known populations at Pink Lakes in the Murray-Sunset National Park and the northern section of Hattah-Kulkyne National Park and adjacent private land, to see if these populations

have survived the drought that occurred in north-west Victoria between 1997 and 2009;

- Survey for new populations within Hattah-Kulkyne National Park and at Pink Lakes in the Murray-Sunset National Park; and
- Identify threats to the known populations to guide future management.

Method

Field surveys were conducted at 17 sites within Hattah-Kulkyne National Park and adjacent private land in March 2012 and at four sites at Pink Lakes in October 2011 and March 2012. These surveys coincided with the spring and autumn

peaks of the adult flight periods. Survey areas were either known sites (to monitor populations) or areas of suitable habitat where it was thought that the species may occur.

The surveys for adults of the Arid Bronze Azure Butterfly were conducted by walking through sites with a hand held butterfly net. This was to enable the brief capture (if necessary) of individuals to confirm species identity, before immediate release (at the precise point of capture). Surveys for ova of the species were carried out by inspecting the entrances of sugar ant nests at the base of living trees and shrubs with a hand held magnifying lens and torch.



Figure 5: Sugar ant (*Camponotus terebrans*) nest at the base of a living tree. Photo: Fabian Douglas.

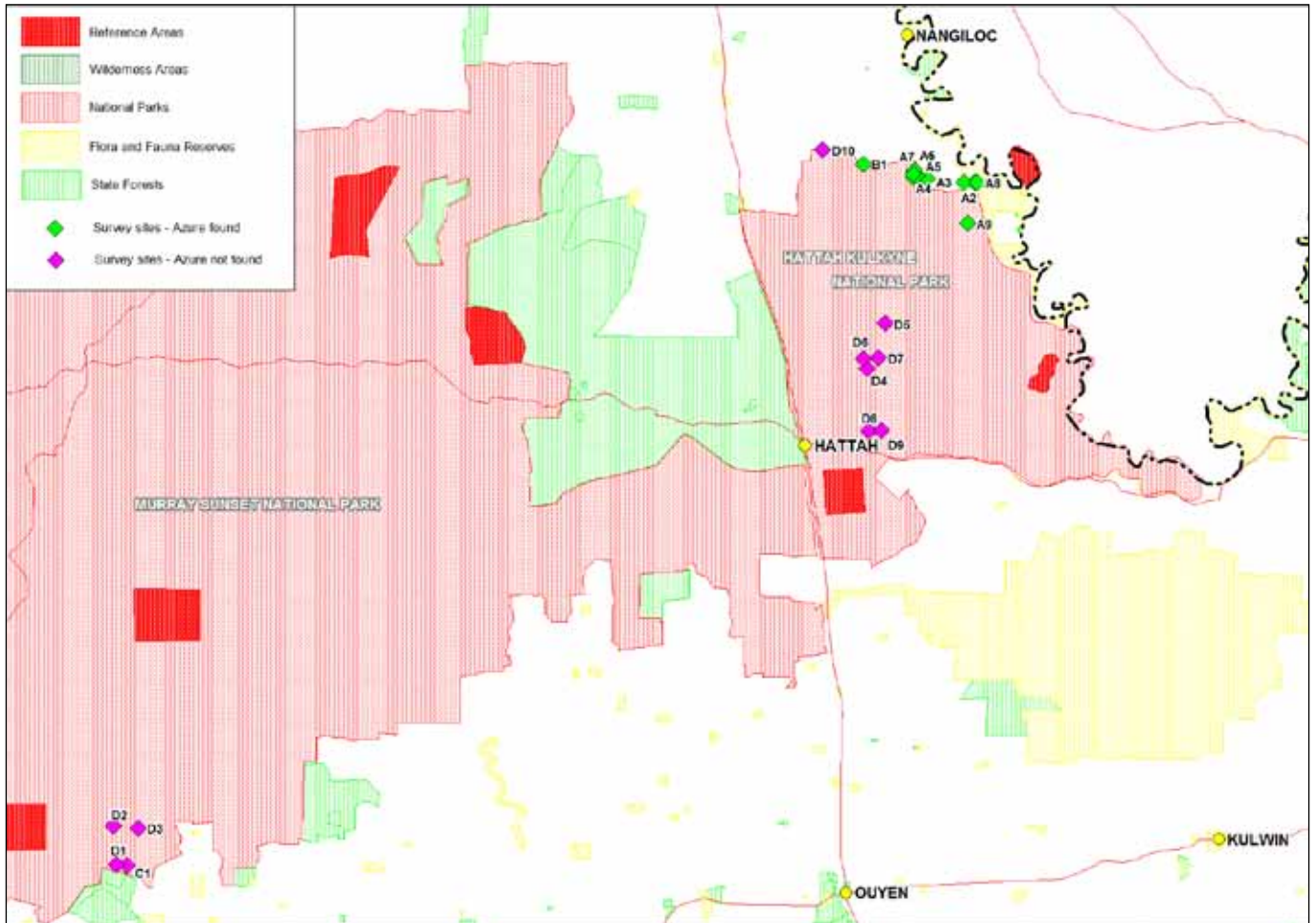


Figure 4: Map of study area. Map: Wildlife Profiles.

Results

The Arid Bronze Azure Butterfly was found in ostensibly sustainable population levels throughout the previously occupied areas of private land. It was also recorded in lower numbers in the adjacent areas of Hattah-Kulkyne National Park. The species was found at one new locality within Hattah-Kulkyne National Park. Although this record is based on a single female only, it is possible that the species is using this area for breeding because sugar ant nests were abundant at the site. Adults or ova of the Arid Bronze Azure Butterfly were not found in any of the other seven additional sites surveyed in Hattah-Kulkyne National Park.

No evidence of the species (adults or ova) was found within the formerly occupied area of Pink Lakes. The butterfly may still be present in very low numbers because sugar ant nests were present throughout the area. However, the population of the Arid Bronze Azure Butterfly may also be extinct at Pink Lakes after the 2007 to 2009 drought.

Threats identified during the surveys include:

- Feral pigs (*Sus scrofa*) disturbing soil in Arid Bronze Azure Butterfly habitat (Figure 5);
- Dieback of an undetermined cause has widely killed Slender Hop-bush (*Dodonaea viscosa*) in the northern

section of Hattah-Kulkyne National Park and adjacent private land (Figure 6). The Arid Bronze Azure Butterfly frequently deposits eggs at sugar ant nests at the base of Slender Hop-bush. The dieback may therefore reduce the availability of breeding sites for the butterfly;



Figure 6: Feral pig disturbance. Photo: Fabian Douglas



Figure 6: Dieback of Slender Hop-bush (*Dodonaea viscosa*). Photo: Fabian Douglas.

- Tree decline in Black Box (*Eucalyptus largiflorens*) and Moonah (*Melaleuca lanceolata*) woodland in the northern section of Hattah-Kulkyne National Park; this would have once been potential habitat for the Arid Bronze Azure Butterfly and sugar ant; and
- Weed invasions, particularly African Box-thorn (*Lycium ferocissimum*) and Bridal Creeper (*Asparagus asparagoides*).
- Control weeds, particularly African Box-thorn and Bridal Creeper within Hattah-Kulkyne National Park and on public roadsides near known Arid Bronze Azure Butterfly populations;

Key recommendations

Recommendations for the long-term conservation of the Arid Bronze Azure Butterfly include:

- Work with landholders to address threats to Arid Bronze Azure Butterfly populations on private land where possible;
- Investigate the cause of dieback of Slender Hop-bush on private land and nearby areas of Hattah-Kulkyne National Park;

- Monitor known populations of Arid Bronze Azure Butterfly every three years to assess numbers of adults and ova and potential threats; and
- Additional surveys to determine if the species is still present at Pink Lakes and to locate new populations should also be undertaken when funding is available.

Acknowledgements

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Further information

The information for this bulletin has been taken from 'Abundance and extent of Mildura Ogyris (*Ogyris subterrestis subterrestis*) at Hattah-Kulkyne National Park, adjacent freehold land and Murray-Sunset National Park', a report for the Mallee CMA by Wildlife Profiles Pty Ltd.



Figure 7: Male Arid Azure Butterfly at rest on Nitre Goosefoot (*Chenopodium nitriaceum*). Photo: Fabian Douglas.

Project Partners



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