

# *Oreisplanus munionga* subsp. *larana*

## Marrawah skipper



TASMANIAN THREATENED SPECIES LISTING STATEMENT

Marrawah skipper © Phil Bell

**Scientific name:** *Oreisplanus munionga* subsp. *larana* Couchman, 1962

**Common name:** Marrawah skipper

**Group:** Invertebrate animal, butterfly, family Hespiriidae

**Status:** *Threatened Species Protection Act 1995:* **endangered**

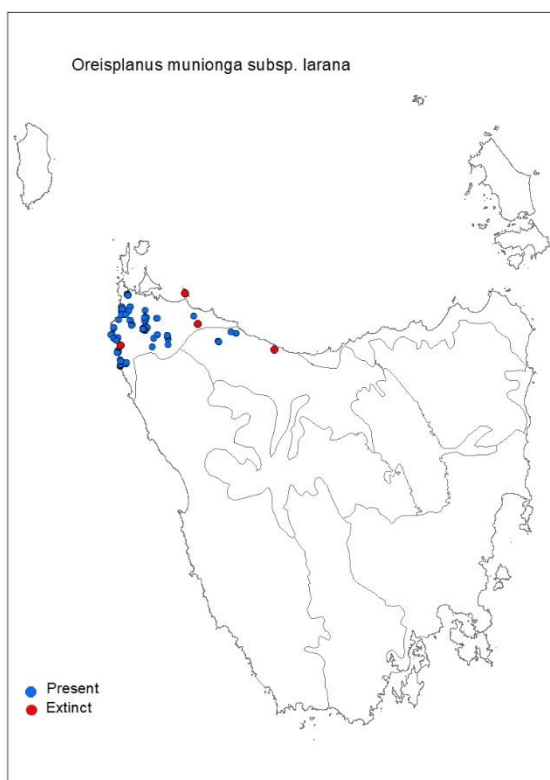
*Environment Protection and Biodiversity Conservation Act 1999:*  
**Vulnerable**

*IUCN Red List:* **Not listed**

**Distribution:** Biogeographic origin: **Endemic**

Tasmanian NRM Region: **Cradle Coast**

Tasmanian IBRA bioregion: **King, Northern Slopes**



**Figure 1.** The distribution of *Oreisplanus munionga* subsp. *larana*, showing bioregions. Data from Natural Values Atlas (NVA 2023)



**Plate 1.** Marrawah skipper © CSIRO

Males (left), females (right).

Top surface (top specimens), underside (bottom specimens)

**SUMMARY:** The Marawah skipper (*Oreisplanus munionga* subsp. *larana*) is a fast flying, brightly coloured brown and yellow butterfly. The species is restricted to coastal and near-coastal areas of the northwest coast of Tasmania and is exclusively associated with the tussock-sedge *Carex appressa*, which is the larval host and food plant. The habitat includes dense *Carex appressa* sedgeland (mainly along drains and forest margins), swamp forest, plantations and pasture. The main threats to the species are clearing of habitat, fragmentation of sites, cattle grazing, weed invasion and inappropriate fire and slashing regimes. The objectives for managing this species include: monitoring and protecting known sites, searching for new locations, reducing clearing at known sites and within potential habitat, managing cattle grazing and fire at known sites and within potential habitat, and increasing the understanding of the species' ecology.

#### IDENTIFICATION AND ECOLOGY

The Marawah skipper (*Oreisplanus munionga* subsp. *larana*) is a fast flying, brightly coloured butterfly. The name “skipper” comes from the rapid and erratic flight typical of species of this family. Skippers are usually considered as butterflies, but they are somewhat intermediate between butterflies and moths. Skippers differ from other butterflies in having a broad head, antennae that are widely spread apart, and a dominance of brown and yellow in their body colour.

The topside of the Marawah skipper wings are a rich caramel brown with pale yellow markings, with a pale yellow underside. The sexes are similar although the females tend to be larger, slightly paler and more yellowish on the underside. The male wingspan is 25 mm, the female 30 mm (Plate 1).

The Marawah skipper has an annual lifecycle, most of which is in larval and pupal stages, with a short time of several weeks as an adult (Braby 2000). The adult flight period is mid-January to mid-February (McQuillan 1994, Neyland 1994).

Eggs are laid singly on the leaves of *Carex appressa*. Eggs are deposited on the underside of the lower half of the leaf, usually on green leaves but sometimes on dead brown leaves (Braby 2000).

Larvae feed exclusively on *Carex appressa* (family Cyperaceae), a large (1-1.5 m), clump-forming native sedge (Neyland 1994, Bell 2002).

Larvae feed at night, resting by day inside a cylindrical shelter, constructed near the leaf tips or, in later instars, about midway along the length of the leaves (Braby 2000) (Plate 2). Pupation takes place in the final shelter, the head of the pupa oriented upwards. Pupation lasts from 14 to 18 days (Braby 2000).

Adults feed on nectar from flowers in close proximity to the larval food plant, showing a preference for everlasting daisy flowers (Asteraceae) (Braby 2000). Adults have also been observed feeding on nectar from the weeds *Cirsium arvense* (creeping thistle) and *Hypochoeris radicata* (rough catsear) (both Asteraceae) (Bell 2002).

There is one other subspecies, the alpine sedge-skipper (*Oreisplanus munionga* subsp. *munionga*), which occurs in the mountains of southeastern mainland Australia between 1060 m and 1600 m (Braby 2000).



**Plate 2.** Larvae of the Marawah skipper feeding on *Carex appressa* © Hans Wapstra

#### Survey techniques

The adult butterflies are generally observed after 10am on mild days with light winds and temperatures greater than 18 °C during the flight period of mid-January to mid-February (McQuillan 1994, Neyland 2001). Flight activity often ceases by mid to late afternoon, after which adults can be seen resting on clumps of *Carex* (Braby 2000). When at rest, the underside of the wing is well camouflaged with the background vegetation (Braby 2000).

Adults are only detectable during the brief flying season, but larval/pupal shelters can be detected at other times of the year (Bell 2002) (Plate 3).

Some expertise and training is required to detect and identify the larval/pupal shelters and evidence of larval feeding.



**Plate 3.** Distinctive appearance of larval shelter of the Marrawah skipper in leaves of *Carex appressa* (image by Phil Bell ©)

### Confusing species

Adults of the Marrawah skipper are similar to other skipper species in Tasmania but are distinguishable by the underside of the wing, which is bright yellow flecked with brown (Plate 1). The Marrawah skipper is also similar to the subspecies *O. m. munionga* (alpine skipper) present on mainland Australia.

### DISTRIBUTION AND HABITAT

The Marrawah skipper is endemic to Tasmania, occurring in northwestern Tasmania. It ranges from Penguin in the east, to Woolnorth in the northwest, to Temma in the west and as far inland as Trowutta and Preolenna. The species is considered to occur in 34 locations (Table 1, Figure 1). Distances between known subpopulations range from 2.5–30 km. Some of the locations that are close together in proximity may belong to the same subpopulation.

Most colonies of Marrawah skipper are in near-coastal areas at low altitudes (less than 50 m above sea level), although some of the more recently discovered sites occur further inland at altitudes up to 250 m a.s.l.

It is likely that the species once occurred throughout the lowlands of northwest Tasmania (Bell 2018).

The Marrawah skipper occurs solely on its habitat plant, the native sedge *Carex appressa*, (Bell 2002). The habitat of Marrawah skipper is therefore any vegetation type, in northwest Tasmania, dominated by *C. appressa* or with an understorey dominated by *C. appressa*. This includes vegetation communities such as *Meleleuca ericifolia* swamp forest, *Acacia melanoxylon* swamp forest, eucalypt forest, coastal scrub, as well as plantation forest and along drainage lines. *Carex appressa* is a colonising species favourable of disturbance, and the habitat varies from dense undisturbed stands of the sedge to highly disturbed sites (Plates 4 & 5).

The distribution of the Marrawah skipper along the north coast is severely fragmented, containing several disjunct subpopulations separated by large expanses of unsuitable habitat, such as those near Wynyard, Preolenna, Mawbanna, Penguin (possibly extinct) and Stanley (believed extinct).

The Marrawah skipper is a powerful flyer and may be able to travel tens of kilometres in a flying season (P. Bell pers. comm.) but no specific data is available on their movements between sites.



**Plate 4.** Dense *Carex appressa* habitat of the Marrawah skipper (image by Phil Bell ©)



**Plate 5.** Swamp forest habitat of the Marrawah skipper (image by NRE Tas ©)

### POPULATION PARAMETERS

*Number of subpopulations:* 34 (4 possibly extinct)

*Extent of occurrence:* 4152 km<sup>2</sup> (2649 km<sup>2</sup> excluding possibly extinct sites)

*Linear extent:* 122 km

*Area of occupancy (as per IUCN criteria):* 208 km<sup>2</sup> (200 km<sup>2</sup> excluding possibly extinct sites)

*Number of mature individuals:* <10,000

*Largest subpopulation:* unknown

There are 34 subpopulations of Marrawah skipper, including four possibly extinct sites at Penguin, Stanley, Mawbanna and Tiger Flat. The extent of occurrence of the Marrawah skipper is approximately 4152 km<sup>2</sup>, which is reduced to 2649 km<sup>2</sup> if the sites believed to be extinct are excluded. The area of occupancy is estimated at 208 km<sup>2</sup>, or 200 km<sup>2</sup> if the extinct sites are not included.

The area of occupancy has been reduced historically, which is likely to have led to a subsequent decline in population abundance. There is evidence that substantial areas of potential habitat in north-western Tasmania have been cleared for agricultural development since European settlement (e.g. Harris & Kitchener 2005). There has also been extensive degradation of habitat by cattle grazing and other disturbance (Bell 2018). Table 1 notes changes in abundance and size of colonies between years.

A survey in 2002 noted that the species was absent from Stanley and Tiger Flats which was attributed to habitat loss and degradation (Bell 2002).

In 2018, further surveys reconfirmed that the species was absent from Stanley and noted that the species was also absent from Penguin and Mawbanna (Bell, 2018). Currently, the most easterly known site for the species is considered to be near Wynyard (NVA 2023). New sites have been discovered further inland than previously recorded at Trowutta and Preolenna (Bell, 2018, NVA 2023).

Most surveys have noted the presence or absence of the species, with limited counts undertaken at some sites (Neyland 2001, Bell 2002, Bell 2018). In 2001, the total population size was estimated to be less than 10,000 (Neyland 2001) but may be substantially less than this (P. Bell pers. comm.). The density of larval/pupal shelters may be used as an index of abundance (P. Bell pers. comm.). Table 1 indicates the relative abundance of butterflies at each subpopulation (based on NVA data and previous counts (Neyland 2001, Bell 2002, Bell 2018), as well as an estimate of the colony's size based on habitat mapping.

### RESERVATION STATUS

The Marrawah skipper occurs within the Arthur-Pieman Conservation Area, Sundown Point State Reserve and Welcome River State Reserve. A large subpopulation occurs within the Preminghana Indigenous Protected Area. A few subpopulations occur within Informal Forest Reserves, and one subpopulation occurs in a local council reserve, the Marcus River Rd Informal Reserve. Two subpopulations occur within private conservation covenants.

### CONSERVATION STATUS

The Marrawah skipper was listed as endangered in 2002 on the *Tasmanian Threatened Species Protection Act 1995*, meeting the following criteria based on the knowledge available on the species at that time:

B: extent of occurrence estimated to be less than 500 km<sup>2</sup>, B1: severely fragmented, B2c: continuing decline in area, extent and/or quality of habitat.

The species has also been listed as Vulnerable under the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* since 2011. The species was also listed as a species of least concern on the IUCN Red List in 1996; this assessment is due for revision.

**Table 1.** Population summary for the Marawah skipper

| No. | Location                                     | Tenure  | NRM <sup>1</sup> region | 1:25 000 mapsheet | Years seen                   | Extent of subpopulation (ha) | Abundance  |
|-----|--|---|-------------------------|-------------------|------------------------------|------------------------------|--|
| 1   | Penguin                                      | Private property  | Cradle Coast            | Ulverstone        | 2005 (also surveyed in 2018) | <1                           | Uncommon 2005<br>Presumed extinct 2018                               |
| 2   | Wynyard (Camp Creek)                         | Informal forest reserve                                     | Cradle Coast            | Calder            | 2018<br>2022                 | 2                            | Uncommon   |
| 3   | Wynyard (Oldina Forest Reserve)              | Informal forest reserve                                     | Cradle Coast            | Calder            | 2018                         | <1                           | Uncommon 2018  |
| 4   | Preolenna                                    | Private property  | Cradle Coast            | Milabena          | 2020                         | 13                           | Uncommon   |
| 5   | Mawbanna                                     | State forest <sup>2</sup>                                   | Cradle Coast            | Rocky Cape        | 2015 (surveyed 2016 & 2018)  | <1                           | Uncommon 2015<br>Not detected 2016<br>Presumed extinct 2018          |
| 6   | Stanley                                      | Private property  | Cradle Coast            | Stanley           | 1993<br>2002 (surveyed 2018) | <1                           | Common 1993<br>Absent 2002<br>Uncommon 2016<br>Presumed extinct 2018 |
| 7   | Trowutta (east near Joiner Creek)            | Private property  | Cradle Coast            | Tayatea           | 2021                         | <1                           | Common   |
| 8   | Trowutta (east near Tayatea Rd)              | Private property & State forest <sup>2</sup>                | Cradle Coast            | Tayatea           | 2017                         | <1                           | Uncommon   |
| 9   | Trowutta (southeast near Arthur River)       | State forest <sup>2</sup>                                   | Cradle Coast            | Tayatea           | 2017                         | <1                           | Uncommon   |
| 11  | Roger River West (Eaves Rd)                  | Private property  | Cradle Coast            | Roger             | 2013<br>2014                 | <1                           | Uncommon   |
| 12  | Roger River West (Donalds Rd)                | Private property  | Cradle Coast            | Roger             | 2020                         | <1                           | Uncommon   |
| 13  | Arthur River (Sumac Rd near Kanunnah Bridge) | State forest <sup>2</sup>                                   | Cradle Coast            | Sumac             | 2017                         | <1                           | Uncommon   |
| 14  | Christmas Hills                              | Private property  | Cradle Coast            | Togari            | 2016                         | <1                           | Common   |
| 15  | Montagu Plains (Farnhams Creek)              | Private property (plantation)                               | Cradle Coast            | Mella             | 2016                         | <1                           | Uncommon   |
| 16  | Togari (Blackwood Rd)                        | Private property, State forest <sup>2</sup> & road easement | Cradle Coast            | Togari            | 2010<br>2017                 | 100                          | Uncommon   |
| 17  | Togari (Eldridge Rd)                         | State forest <sup>2</sup>                                   | Cradle Coast            | Togari            | 2017                         | 30                           | Common   |

Listing Statement for *Oreisplanus munionga* subsp. *larana* (Marrawah skipper)

| No. | Location                                      | Tenure  | NRM <sup>1</sup> region | 1:25 000 mapsheet         | Years seen                           | Extent of subpopulation (ha) | Abundance                                     |
|-----|---|---|-------------------------|---------------------------|--------------------------------------|------------------------------|---|
| 18  | Togari (near Salmon River Rd & Montagu Swamp) | Private property  | Cradle Coast            | Togari                    | 2017                                 | 33                           | Common 2007<br>Uncommon 2017                  |
| 19  | Woolnorth Rd (near Swan Bay Rd)               | Private property  | Cradle Coast            | Studland                  | 2010<br>2012                         | 14                           | Common  |
| 20  | Welcome River (Harcus River Rd)               | Welcome River State Reserve                                   | Cradle Coast            | Cameron                   | 2002<br>2008                         | <1                           | Common 2002                                   |
| 21  | Welcome River (middle)                        | Private Reserve   | Cradle Coast            | Cameron                   | 2005                                 | <1                           | Uncommon                                      |
| 22  | Welcome River (south)                         | Private property & Harcus River Rd Informal Reserve           | Cradle Coast            | Cameron                   | 2004<br>2005                         | <1                           | Uncommon                                      |
| 23  | Redpa (Welcome Swamp Rd)                      | Private property  | Cradle Coast            | Marrawah                  | 2016<br>2017                         | 2                            | Common 2016                                   |
| 24  | Welcome Swamp (Jollys Corner)                 | State forest <sup>2</sup> & Informal forest reserve           | Cradle Coast            | Marrawah                  | 1993<br>2002<br>2017                 | 8                            | Common 1993<br>Uncommon 2002<br>Uncommon 2017 |
| 25  | Preminghana (including Mt Cameron West)       | Preminghana Indigenous Protected Area & private property      | Cradle Coast            | Cameron                   | 1993<br>2002<br>2007<br>2008         | 356                          | Common 1993,<br>2002 & 2008                   |
| 26  | Marrawah                                      | Private property  | Cradle Coast            | Marrawah                  | 1993<br>2002<br>2017                 | <1                           | Uncommon 1993<br>& 2002                       |
| 27  | Mawson Bay (Eagle Rock & East)                | Arthur-Pieman Conservation Area & private property            | Cradle Coast            | Marrawah                  | 1993<br>2002                         | 1.5                          | Common 1993 &<br>2002                         |
| 28  | Bluff Hill Point                              | Arthur Pieman Conservation Area                               | Cradle Coast            | Bluff & Bluff Extension A | 2008                                 | 1.5                          | Uncommon                                      |
| 29  | Church Rock                                   | Arthur Pieman Conservation Area                               | Cradle Coast            | Bluff                     | 2008                                 | 2                            | Common  |
| 30  | Arthur River (township)                       | Private property & roadside                                   | Cradle Coast            | Bluff                     | 2008<br>2011                         | 5.5                          | Common  |
| 31  | Tiger Flat                                    | Arthur Pieman Conservation Area                               | Cradle Coast            | Sundown                   | 1993<br>2002                         | >1                           | Common 1993<br>Presumed extinct 2002          |
| 32  | Nelson Bay (incl. Sundown Point)              | Sundown Point State Reserve & Arthur Pieman Conservation Area | Cradle Coast            | Sundown                   | 1993<br>1997<br>2000<br>2002<br>2008 | 20                           | Common 1993<br>Uncommon 2002<br>Present 2008  |

| No. | Location   | Tenure   | NRM <sup>1</sup> region | 1:25 000 mapsheet | Years seen   | Extent of subpopulation (ha) | Abundance   |
|-----|--|--|-------------------------|-------------------|--------------|------------------------------|---|
| 33  | Temma (Rebecca Lagoon to Poppy Lagoon, incl. Templars Creek and North) | Arthur-Pieman Conservation Area & private property | Cradle Coast            | Temma             | 2002<br>2008 | 135                          | Ranged from uncommon (north) to common (south) along site 2002<br>Common 2008 |
| 34  | Temma East (Kaywood Road)  | Private property & State forest <sup>2</sup>       | Cradle Coast            | Temma             | 2008<br>2010 | 6.5                          | Uncommon 2008 & 2010  |

1 NRM region = Natural Resource Management Region

2 State forest = permanent timber production zone land (PTPZ) and future potential production forest land (FPPF)

The Marrawah skipper has been identified as one of the top five Australian butterfly species most at risk of extinction by 2040 (i.e. within 20 years). It was determined to have a medium-high extinction risk of 33%, unless remedial actions are undertaken to protect the species, such as reducing clearance and conversion of habitat, reserving important sites, excluding grazing, fire management, weed management, revegetating habitat, and raising public awareness (Geyle et al. 2021).

#### THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

Clearance of habitat, cattle grazing and inappropriate fire regimes, both at known sites and within potential habitat, are the main ongoing threats to the Marrawah skipper but there are also other threats that may impact the species.

**Loss of habitat (land clearing):** There has been extensive clearance and conversion of native vegetation on private property for agriculture within the range of the Marrawah skipper, mainly to create intensively managed grazing land (e.g. Bell 2018, Harris & Kitchener 2005). Most of the Marrawah skipper's habitat does not occur within threatened vegetation communities, and so is not protected from clearing by legislation. Continued land clearance is considered to be one of the major ongoing threats to the species (Bell 2018). Land clearing is a potential threat for all subpopulations occurring on private land.

Land clearing for developments such as housing, infrastructure and dams pose a threat to the species due to the loss of habitat and individuals.

The subpopulation near Penguin was protected from a dam proposal but has not been observed recently (Bell & Miller 2005).

The subpopulation at Stanley is believed to have been lost due to extensive land clearing and severe degradation by cattle (Bell 2002).

Land clearing for forestry operations can be a potential threat in areas of habitat within the species' range. Marrawah skipper has been detected within areas of native forest, eucalypt plantations and pine plantations containing an understorey of *Carex appressa* (Bell 2018). This risk has been reduced by the need for surveys and management of the species within known sites and potential habitat within wood production forests as required under the *Forest Practices Code*. The risk has been further reduced through the requirements of the Tasmanian Permanent Native Forest Estate Policy which prohibits broadscale clearance and conversion of native forest on public land.

**Cattle grazing:** Heavy cattle grazing can degrade Marrawah skipper habitat through browsing of *Carex appressa* tussocks often down to the ground, either eliminating larvae and pupae in the process or making the tussock unsuitable as a shelter and food site. Cattle may also trample habitat, especially in open situations, but also beneath remnant stands of scrub and trees. Many subpopulations on private land are subject to ongoing disturbance from cattle grazing (Bell 2018).

**Roadside maintenance:** Inappropriate slashing of the *Carex appressa* habitat for roadside maintenance can have a negative impact on Marrawah skipper locations.

If the tussocks are slashed to the ground, or too regularly, this can eliminate larval shelters or make the tussocks unsuitable for use as shelter or food.

Several subpopulations are subject to regular slashing to maintain clear terrain for land management purposes (Bell 2018). For example, habitat adjacent to the Bass Highway at the Welcome River bridge is slashed regularly to maintain the power easement.

**Recreational activities:** Inappropriate disturbance of Marrawah skipper habitat due to inadvertent trampling by people is also a potential threat to the species. There has been evidence of disturbance by visitors at sites next to carparks and roads (Bell 2002).

**Inappropriate fire regime:** Inappropriate fire regimes are a threat to the species as they have the potential to eliminate Marrawah skipper from a site. Part of the Nelson Bay site was burnt in a hot fire in winter 2001, after which no butterflies were detected in 2002 (Bell 2002). The species has subsequently recolonised the site from surrounding areas.

A low intensity, mosaic burn of an appropriate frequency for the vegetation type is critical to maintain Marrawah skipper sites. This method retains patches of habitat and possibly individuals onsite, ensuring that the site can be easily recolonised. Staggering the burning of habitat in the landscape over time is important to maintain a range of fire ages, including unburnt areas, to ensure that the various life stages of Marrawah skipper are retained to recolonise burnt areas.

**Weeds:** Weeds pose a threat to the habitat of the Marrawah skipper because they have the potential to outcompete the *Carex appressa* habitat plant. Several subpopulations are threatened by weed infestations, including those at Marrawah, Welcome Swamp, Welcome River (thistle *Cirsium arvense*) and Stanley (pasture grass) (Bell 2002).

**Climate change:** Tasmania is showing a trend towards a warmer and drier climate with more frequent lightning due to climate change (Styger et. al. 2018).

This poses a threat to the species due to the predicted increase in both the frequency and effect of wildfires on the habitat of the Marrawah skipper.

**Stochastic risk:** The highly localised nature and small size of many colonies of the Marrawah skipper, combined with their fragmented distribution, may expose the species to a stochastic risk of extinction.

## MANAGEMENT STRATEGY

### Management objectives

The main objectives for the recovery of the Marrawah skipper are to decrease habitat loss caused by land clearing, fire and disturbance, by creating greater awareness of the species among landowners and reserving further areas where the species occurs.

### What has been done?

**Targeted surveys & monitoring:** The Marrawah skipper was first recorded in 1961 from a single site near Marrawah (Couchman 1962). Despite survey efforts no further localities were recorded until 1994 (Neyland 2001). Further surveys of known sites and potential habitat largely on public land were undertaken in 2002, 2008 and 2017, which expanded the knowledge of the distribution and abundance of the species (Bell 2002, Bell 2018). There have also been miscellaneous surveys for development proposals and forestry operations (e.g. Bell & Miller 2005, Fulford 2011).

**Existing management:** The Marrawah skipper is included in the Tasmanian government's Bushfire Risk Assessment Model (BRAM) that provides guidance to emergency services on the protection of natural values during bushfires.

Slashed habitat has been allowed to regenerate at the Preminghana site to provide additional habitat for the species (Bell 2002).

**Forestry management:** Under the Tasmanian *Forest Practices Code* there are requirements to survey for and manage Marrawah skipper at known sites and in areas of potential habitat within wood production forests (FPA 2020, FPA 2021).



The Forest Practices Authority and NRE Tas provide occasional training to the forest industry on the identification and management of habitat of the Marrawah skipper. The forest industry intermittently identifies new subpopulations within state forest (e.g. Fulford 2011).

**Conservation on private land:** Two conservation covenants have been established on private land containing Marrawah skipper.

**Public awareness:** A flyer on threatened skipper butterflies including the Marrawah skipper has been produced collaboratively by the Tasmanian and Australian governments, the NRMs and the Understorey Network (DPIW et. al. undated).

#### What is needed?

Agencies, groups or individuals may assist with some or all of the following recovery actions (coordinated efforts may achieve the best and most efficient results):

- Create awareness of the species – provide information and extension support to relevant Natural Resource Management committees, local councils, government agencies, landowners, the local community and development proponents on the locality, significance and management of known subpopulations and potential habitat;
- Improve understanding of the status of the species – monitor known subpopulations to determine abundance, area of occupancy, condition of habitat and trends;
- Improve understanding of the status of the species – resurvey sites believed to be extinct to determine whether the species persists at these sites;
- Improve understanding of the distribution of the species – undertake extension surveys of potential habitat within the species' range;
- Decrease habitat loss due to land clearing and degradation by creating greater awareness of the species among private landowners;
- Decrease habitat loss and degradation due to slashing, fire and developments by creating awareness of the species needs among public land managers (e.g. local councils, Parks & Wildlife Service, Transend);

- Fence key sites to restrict cattle access and prevent degradation of habitat and prevent further population declines;
- Promote the establishment of conservation covenants on private land supporting Marrawah skipper to improve protection of the species;
- Determine the species' response to disturbance types to determine an appropriate regime (e.g. slashing, stock grazing, fire) to improve understanding of the species ecological requirements;
- Determine the impacts of climate change on the species to determine appropriate management;
- Control weeds at sites where Marrawah skipper occurs to reduce competition with the species habitat.

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**View:**

<https://nre.tas.gov.au/conservation/threatened-species-and-communities/lists-of-threatened-species/full-list-of-threatened-species>

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**Permit:** It is an offence under Tasmanian legislation to collect, catch, damage, injure, destroy, or kill a threatened species listed under the *Threatened Species Protection Act 1995*, without a permit.