Megathymus ursus (Ursine Giant-skipper)

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Taxonomy

- **Class**: INSECTA
- **Order**: LEPIDOPTERA
- **Family**: HESPERIIDAE
- **Genus**: Megathymus
- **Scientific Name**: *Megathymus ursus* Poling, 1902
- **Common Name**: Ursine Giant-skipper
- **Synonyms**:
- **Taxonomic Name Source**:Zhang, J., Q. Cong, J. Shen, P. A. Opler and N. V. Grishin. 2020. Genomic evidence suggests further changes of butterfly names. The Taxonomic Report of The International Lepidoptera Survey 8(7):1-41.

Agency Status

- **NMDGF**:
- **Federal Status**:
- **BLM Sensitive**:
- **USFS**:
- **IUCN Red List**: Not Evaluated
- **Nature Serve Global**: G4
- **NHNM State**: S1
- **NM Endemic**:NO

Description

The wingspan of this, our largest skipper, may approach four inches. The forewing upperside is dark brown with small subapical white spots and a submarginal band that varies from yellow to orange and from narrow to broad, to some extent depending on locality. Ursine Giant-Skipper has blue-violet suffusion on the underside. Like Yucca Giant-Skipper, there are two pale spots on the HW costa. The VFW repeats the pattern of the DFW, but the spots are paler.

Description courtesy of Steven J. Cary, Butterflies of New Mexico, 2024

Habitat and Ecology

This butterfly resides in yucca grasslands and open desert woodlands, usually dotted with yuccas and oaks (Scott 1986, Opler and Wright 1999, Glassberg 2001, Lotts and Naberhaus 2023, Cary and Toliver 2024). The Ursine Giant-Skipper is univoltine and generally flies from July to August in Arizona and from late June to August in New Mexico, with extreme flight dates in New Mexico ranging from June 20th to August 7th. Adults are hardly ever seen (Scott 1986,

Cary and Toliver 2024).

The host plants for this butterfly are Yuccas (*Yucca* spp.). Schott's Yucca (*Yucca schottii*) and Torrey's Yucca (*Yucca torreyi*) are the primary host plants, but the species less frequently uses Banana Yucca (*Yucca baccata*) and Arizona Yucca (*Yucca arizonica*) (Lotts and Naberhaus 2023, Cary and Toliver 2024). Adults of this species are not known to feed; however, males do sip moisture from mud (Lotts and Naberhaus 2023, Cary and Toliver 2024).

Most sightings of adults have been of males who hilltop to find females (Scott 1986, Cary and Toliver 2024). After mating eggs are glued singly on the leaves of their host Yuccas (Scott 1986, Lotts and Naberhaus 2023, Cary and Toliver 2024). Eggs hatch soon after and young larvae may feed on leaves before crawling down the plant and burrowing into the root where they construct a tent (Scott 1986, Lotts and Naberhaus 2023, Cary and Toliver 2024). Older larvae overwinter in these tents before pupating in the tent and emerging the following summer (Scott 1986, Lotts and Naberhaus 2023, Cary and Toliver 2024).

Geographic Range:

This butterfly has a very limited and localized distribution in the mountains of southern Arizona and southern New Mexico as well as in adjacent Mexico (Lotts and Naberhaus 2023, Cary and Toliver 2024, GBIF.org 2024). Many older sources report occurrences in western Texas as well; however, these now belong to Viola Yucca Borer (*Megathymus violae*) which was raised to a full species in 2020 (Zhang *et al.* 2020, Cary and Toliver, Pelham 2024).

Conservation Considerations:

There are no known conservation actions being taken for this species throughout its range. This species is being considered for inclusion as a Species of Greatest Conservation Need in the 2025 revision of the New Mexico State Wildlife Action Plan (NMDGF 2024). Additional research on the geographic range, threats, and necessary conservation actions is necessary. Specifically, the species extent into northern Mexico is not yet understood.

Threats:

Threats to this species are not well understood, though threats to the host plant are concerning. This butterfly has a narrow host breadth, primarily using just two species, Schott's and Torrey's Yucca (*Yucca schottii* and *Y. torreyi*, respectively) (Scott 1986, Lotts and Naberhaus 2023, Cary and Toliver 2024). Both of these yuccas are not found in high numbers and used to be on the New Mexico Rare Plants list (New Mexico Rare Plant Technical Council 1999). Yuccas are pollinated solely by yucca moths, or Pronuba moths (*Tegeticula sp.*), with some species engaging in obligate mutualisms. For example, Torrey's Yucca and Banana Yucca are thought to have a single pollinator moth species. These types of obligate mutualisms may put these Yucca species at higher risk, because if the pollinator begins to decline, the plants will struggle to reproduce (Baker 1986, Groen 2005). Furthermore, many yucca moths are highly threatened, with several being federally listed as endangered in North America. The loss of flowers or seeds due to ungulate herbivory has been cited as an ongoing threat to many yucca moth species as this can cause mortality of larvae and reduce available host resources (COSEWIC 2013, NatureServe 2024). Banana Yucca was assessed by the IUCN Red List in 2021 and was found to have a continuing decline in the number of mature individuals (Clary *et al.* 2021). Additional threats to yuccas include fire suppression and other disturbances that may limit new seedlings establishment, further reducing populations over time (COSEWIC 2013, NatureServe 2024). Yuccas are also under some pressure from collection for landscaping, food, and use in the international horticultural trade (NatureServe 1996, Clary *et al.* 2021).

Another major threat to this species is likely drought and extreme temperatures. Forsiter *et al.* (2023) showed that the climate is diverging in parts of this species range, more than in other places. This is a major threat to this species especially, as it does not nectar but instead relies on puddles to obtain water and nutrients (Launer *et al.* 1993). The sodium obtained from puddling is critical to butterfly longevity and mating success (Lederhouse *et al.* 1990, Boggs and Jackson 1991, Mitra *et al.* 2016). As drought increases, mating success and lifespan of adults are expected to decrease. This is magnified by how rare the species already is and how limited it is to localized and disjunct habitat patches (Scott 1986, Opler and Wright 1999, Lotts and Naberhaus 2023, Cary and Toliver 2024).

There are also potentially a high numbers of parasitoids on this species. In Carlsbad Caverns a survey for larvae of the Ursine Giant Skipper found six larvae, all of which were killed by Tachinid larvae parasitoids (NPS 2005). It is unclear if high parasitoid loads are adversely impacting this species, but research is necessary to investigate the potential harms to the population at large.

Finally, in addition to small host breadth, this butterfly is univoltine, two factors that increase extinction risk in butterflies. Being univoltine makes organisms less adaptable, as it limits their ability to disperse and hinders their resilience to stressors, and it increases their chances of phenological mismatch (Eskildsen *et al*. 2015, Forister *et al.* 2023).

Population:

The population size and trend are not known for this species. However, many sources describe the species as being extremely rare and localized in many tiny disjunct areas in New Mexico and Arizona (Pyle 1981, Scott 1986, Opler and Wright 1999, Glassberg 2001, Lotts and Naberhaus 2023, Cary and Toliver 2024, NatureServe 2024). With how rare and localized this species is, determination of population size and monitoring of population trends is necessary to ensure survival. Especially as several widespread, relatively common species of butterfly are in decline across the western United States (Forister *et al.* 2021).

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More Information