Agathymus polingi (Poling's Giant-Skipper)

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Taxonomy

- **Class**: INSECTA
- **Order**: LEPIDOPTERA
- **Family**: HESPERIIDAE
- **Genus**: Agathymus
- **Scientific Name**: *Agathymus polingi* (Skinner, 1905)
- **Common Name**: Poling's Giant-Skipper
- **Synonyms**: Megathymus polingi Skinner, 1905 Skinner, 1905
- **Taxonomic Name Source**:Pelham, J. P. 2008. A catalogue of the butterflies of the United States and Canada with a complete bibliography of the descriptive and systematic literature. The Journal of Research on the Lepidoptera. Volume 40. 658 pp. Revised 14 February, 2012.

Agency Status

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

Description

Poling’s Giant-Skipper is small, for a Megathymine, which helps to distinguish it from similar relatives. Dorsal patterns resemble those of Orange Giant-Skipper, but the ground color is more yellow-orange than black. As Arizona Giant Skipper is the species most likely to be found with or near Poling’s, that coloration and its size will help an observer tell them apart. Additionally, Poling’s Giant Skipper doesn’t typically visit wet spots, instead remaining close to colonies of its larval host. The hindwing underside may have prominent white bands. Range and Habitat. This butterfly’s distribution barely includes New Mexico, touching our extreme southwest corner in Guadalupe Canyon (county: Hi), 4600 to 5000’ elevation. It is more common to the south and west into Arizona and northwest Mexico. Life History. Larvae eat Agave schotti, a tiny species that grows on canyon walls. Larvae burrow into undersides of leaf bases. Colonies of this plant occur in Hidalgo and Grant counties and should be examined for this butterfly. Flight. Adults perch on canyon walls near the host plant, often head-down. The one annual generation is on the wing in autumn; our

few records span October 9 to November 20. Comments. Agathymus polingi may fly concurrently with Agathymus aryxna, but its small size makes it easy to distinguish. Its name honors O. C. Poling, a prolific collector in the Southwest in the late 19th century.

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

Habitat and Ecology

This species lives on arid hillsides where dense stands of its sole larval host plant, Schott's Agave (*Agave schottii*), can be found (Glassberg 2001, Lotts and Naberhaus 2021, Bailowitz and Brock 2022). This species has one brood and flies from approximately mid-September to mid-November (Lotts and Naberhaus 2021, Bailowitz and Brock 2022, Cary and Toliver 2023). Adults do not feed and instead can be seen from early morning to midday perching on host plants waiting for mates (Lotts and Naberhaus 2021). After mating, eggs are laid singly on Shott's Agave (Lotts and Naberhaus 2021). Once the eggs hatch, larvae crawl to a leaf and burrow into the undersides of leaf bases, where they feeds until overwintering (Lotts and Naberhaus 2021, Cary and Toliver 2023). In the spring, the caterpillars awaken, make a new burrow, and feed on sap before reentering diapause through the hottest months of summer (Lotts and Naberhaus 2021). Come fall, the larvae awaken and enlarge the burrow exit before pupating and emerging (Lotts and Naberhaus 2021, Cary and Toliver 2023).

Geographic Range:

This species is found in agave studded hillsides and upper Sonoran woodlands of southern Arizona and the extreme southwestern tip of New Mexico (Lotts and Naberhaus 2021, Cary and Toliver 2023, Opler and Wright 1999). The species is also thought to occur in Sonora, Mexico, though there are only two records in the literature, neither of which is recent (Lotts and Naberhaus 2021, GBIF.org 2023). This species is recorded between elevations of 1,280 and 1,981 meters (Bailowitz and Brock 2022, Cary and Toliver 2023).

Conservation Considerations:

There are no ongoing conservation efforts for this species. It was placed on the United States Forest Services sensitive species list for region 3 in 1999, but was later removed (United States Forest Service 2000). Additionally, while this species has a Nature Conservancy Global Rank of G3, which denotes it as threatened throughout its range and recommends that any populations and habitats that are found should be conserved (Lotts and Naberhaus 2021), this does not confer any protections for the species. Research is needed to determine whether the species is extant in Sonora. Monitoring is also needed to ensure populations are stable and to determine the impact of threats.

Threats:

While threats to this species are not well understood, several aspects of its biology make it vulnerable to ongoing environmental changes. A recent study examining biological, ecological, and climate risk factors among butterfly species in the western United States, identified *Agathymus polingi* to be among the most at-risk species (Forister *et al.* 2023). This is primarily due to its univoltine life history, relatively small geographic range, and host specificity (Forister *et al.* 2023). Species that are univoltine are thought to have decreased dispersal abilities, which limits the area they can utilize, in turn making them less resilient to stressors (Eskildsen *et al.* 2015). Reliance on a single host plant magnifies sensitivity to habitat loss and increases the risk for phenological mismatch (Kotiahoâ€¯*et al.*â€¯2005, Palashâ€¯*et al.*â€¯2022, Foristerâ€¯*et al.*â€¯2023, US Fish and Wildlife Service 2023).â€¯ Having a limited range increases the likelihood that one threat may affect a larger portion of the population.

Climate change is likely to be a major concern for this species. In the deserts of the southwestern United States and northern Mexico, droughts are becoming more widespread, severe, and frequent (Williams *et al.* 2022). This species mostly resides in low mountains, hills, and canyons, especially those with standing water (Bailowitz and Brock 2022). Butterflies in the genusâ€¯*Agathymus*â€¯are likley at high relative risk to drought because they rely on precipitation and standing water for puddling, as individuals of this genera do not nectar (Launer *et al.* 1996). That said, *Agathymus polingi* puddles less frequently than other *Agathymus* species (Bailowitz and Brock 2022, Cary and Toliver 2023). This species is also somewhat averse to development (Foristerâ€¯*et al.*â€¯2023) and cannot persist in areas once Schott's Agave is removed.â€¯Drought also increases wildfire risk, which is reported as the most pressing threat to the host plants of this species (Hodgson and Puente 2020).

Population:

The population size and trend are not known for this species, though it is reportedly very spottily distributed and uncommon throughout its range (Brock and Kaufman 2003). There are also few records of the species, possibly in part because recording it is difficult. It remains close to colonies of its Agave host plants (*Agave schotti*), which is often found growing on canyon walls (Cary and Toliver 2023). Determination of population size and monitoring of population trends is necessary to ensure the population is stable, especially as several widespread, relatively common species of butterfly are in decline across the western United States (Forister *et al.* 2021, 2023).

References:

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More Information