

Erebia magdalena (Magdalena Alpine)



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Taxonomy

- **Class:** INSECTA
- **Order:** LEPIDOPTERA
- **Family:** NYMPHALIDAE
- **Genus:** Erebia
- **Scientific Name:** *Erebia magdalena* Strecker, 1880
- **Common Name:** Magdalena Alpine
- **Synonyms:**
- **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

Magdalena is flat black-brown, everywhere. It is so black that it is hard to photograph; it absorbs so much light that normally exposed film just shows a void where the butterfly would be!

Description courtesy of Steven J. Cary, [Butterflies of New Mexico](#), 2024

Habitat and Ecology

As a tundra species, the Magdalena Alpines habitat is rocky alpine areas, namely rockslides and rocky ridges near grasses (Scott 1986, Glassberg 2001). In the southernmost part of its range, the species exists above the treeline and is found above 3505 m (11,500 ft) (Cary and Toliver 2024).

As larva the species's diet is thought to consist of alpine grasses, such as Sedges (*Carex*), Festuca, Rushes (*Juncus*), Woodrushes (*Luzula*), and Meadow-Grasses (*Poa*) (Scott 1986, 1992, 2006; Montana Natural Heritage Program 2024). As adults the species is known to nectar on Alpine Forget-Me-Nots (*Myosotis alpestris*), *Phlox*, *Dryas*, Fleabane (*Erigeron*), *Haplopappus*, and Catchflies (*Silene*) flowers (Opler and Wright 1999, Glassberg 2001, Scott 2014; Montana Natural Heritage Program 2024). The species flies from late June to September with just one flight. In the Arctic portion of the range the flight occurs from late June to July. New Mexico records stretch from July 2 to July 24 (Scott 1986, Opler and Wright 1999, Cary and Toliver 2024). During flight, males spend all day patrolling for females above depressions and over rockslides (Scott 1986). The host plant is unknown but females lay eggs on rocks near plants in the families *Juncaceae*, *Gramineae*, and *Cyperaceae*, leaving caterpillars to find a host plant (Scott 1986). There are records of females laying eggs directly on Sedges (*Carex*) (Scott and Scott 1978; Scott 1986, 1992, 2006; Guppy and Shepard 2001; Montana Natural Heritage Program 2024). The larvae are thought to be biennial hibernators, hibernating as L2 or L3 instars (Scott and Scott 1978; Scott 1986, 1992, 2006; Opler and Wright 1999; Guppy and Shepard 2001; Montana Natural Heritage Program 2024).

Geographic Range:

The Magdalena Alpine is a tundra species, found in western Canada and the United States. The northernmost part of the range includes Alaska, Yukon, and the Northwest Territories (Scott 1986). The range continues south along the Rocky Mountains, with occurrences in Alberta, British Columbia, Montana, Utah, Wyoming, Colorado, and New Mexico (Scott 1986, Lotts and Naberhaus 2021, Cary and Toliver 2024). The species exists in isolated populations on the top of mountain peaks (Cary and Toliver 2023).

The species is known from 10 general localities; two in the Yukon (one on Windy Pass Peak and one near Katherine Creek, in the Mackenzie Mountains), one on the British Columbia and Alberta border (in the Willmore Wilderness Wildland Park), one in Alaska (along the Dalton Highway within the Brooks Mountains), two in Wyoming (one north of the Powder River Pass, in the Bighorn Mountains and one near Tourist Creek, within the Wind River Mountains), one in Utah (in the Uinta-Wasatch-Cache and Ashley National Forests, along the Uinta Mountains), three in Colorado (one in Summit County in the Elk Mountains, one is in the Pike and San Isabel National Forests in the Sawatch Mountains, and one on Trinchera Peak in the Culebra Mountains) (GBIF.org 2024).

There are two subspecies: *Erebia magdalena hilchie* and *Erebia magdalena magdalena*. *Erebia magdalena hilchie* occurs in Alberta and British Columbia. *Erebia magdalena magdalena* occurs in Colorado, New Mexico, and Wyoming (Pelham 2024).

Conservation Considerations:

There have been no known species-wide conservation efforts. However, the species has been listed as endangered/threatened in British Columbia (Wild Research 2015). In 2023, a NatureServe conservation assessment gave the species a rank of Apparently Secure Globally. While seemingly somewhat secure at the species level at the subspecies level there is some conservation concern, *Erebia magdalena hilchie* was given the rank of "impaired" in Alberta. *Erebia magdalena magdalena* has no rank (NatureServe 2024). However, the species is listed in the New Mexico Department of Game and Fish's 2025 Species of Greatest Conservation Need list (New Mexico Department of Game and Fish 2024).

Threats:

The Magdalena Alpine faces many potential threats, especially in the southern portion of its range. In the south, this

species is a Pleistocene relic and is highly threatened by climate change. The western United States is getting hotter and drier as the climate warms (Cook *et al.* 2009, Cook *et al.* 2015, Williams *et al.* 2022). The species occurs above treeline on mountain peaks. Many butterfly species respond to climate change by moving to higher elevations. However without higher elevation habitats to shift to, a small amount of warming could cause this species to become extirpated in their southern range (Forister *et al.* 2010, Holland 2010, RÅdder *et al.* 2021).

With isolated sub-populations on mountain peaks, inbreeding depression is also a concern. The distance between colonies has left this butterfly with relatively little connectivity and genetic flow. In these small isolated sub-populations, deleterious alleles can begin to move through a sub-population with a reduction in heterozygosity, which has been shown to reduce survival rates at several important life stages in butterflies, even after just one generation of mating between full-siblings (Saccheri *et al.* 1998, Nieminen *et al.* 2001).

Lastly, being a biennial butterfly leaves the species vulnerable to stochastic events. Spending two years as larvae with limited mobility, leaves them exposed to environmental stochastic events such as wildfires and predation (Scott 1986, Montana Natural Heritage Program 2024).

Population:

The population size and trend are not known for this species. 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).

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More Information

