Lycaena cupreus snowi (Snow's Lustrous Copper)

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Taxonomy

- **Class**: INSECTA
- **Order**: LEPIDOPTERA
- **Family**: LYCAENIDAE
- **Genus**: Lycaena
- **Scientific Name**: *Lycaena cupreus snowi* (W. H. Edwards, 1881)
- **Common Name**: Snow's Lustrous Copper
- **Synonyms**: Chrysophanus snowi W. H. Edwards, 1881 W. H. Edwards, 1881
- **Taxonomic Name Source**:Guppy, C.S. and J.H. Shepard. 2001. Butterflies of British Columbia. UBC Press and Royal British Columbia Museum: Victoria, British Columbia. 414 pp.

Agency Status

- **NMDGF**:
- **Federal Status**:
- **BLM Sensitive**:
- **USFS**:
- **IUCN Red List**: Not Evaluated
- **Nature Serve Global**: T5
- **NHNM State**: S1
- **NM Endemic**:NO

Description

Male Lustrous Coppers are metallic orange-red above with dark edges and postmedian dark spots; females are more subdued, but with a similar pattern. Undersides of both sexes are silver-gray with heavy black spots and occasional orange overscaling. **Comments.** More information is needed about this species in New Mexico. Our populations belong to Rocky Mountains subspecies Lycaena cupreus snowi (W. H. Edwards 1881), honoring University of Kansas Professor Francis Huntington Snow, who collected the type specimen in Colorado and was a prominent early entomologist in New Mexico c. 1880-1891.

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

Habitat and Ecology

This butterfly is an alpine specialist found in glacial cirques and talus fields at high elevations, with New Mexico

reporting the butterfly as only living above 3650 meters (12,000 feet) in elevation (Scott 1986, Cary and Toliver 2024). Various Buckwheats (*Polygonaceae*) are used as larval host plants, especially Docks (*Rumex*), with other known hosts including Alpine Sheep Sorrel (*R. paucifolius*), Red Sorrel (*R. acetosella*), Garden Sorrel (*R. Acetosa*), and Mountain Sorrel (*Oxyria digyna*) (Scott 1986, Cary and Toliver 2024). This butterfly is either univoltine or biennial and overwinters as a larvae (Cary and Toliver 2024). Flight records across its range stretch from late June to early September with the majority of records concentrated in July and August (Cary and Toliver 2024, GBIF.org 2024). Adults can be seen patrolling for females along talus slopes during the day hiding in the rocks when disturbed (Cary and Toliver 2024).

Geographic Range:

Snow's Lustrous Copper is the southern Rocky Mountains subspecies of the Lustrous Copper (*Lycaena cupreus*). It is found from from the Sangre De Cristo Mountains in northern New Mexico, north through the Colorado Rocky Mountains, and east of the La Sal and Uinta Mountains in Utah and the mountains of southeastern Wyoming. However, no distribution points for Snow's Lustrous Copper in southeastern Wyoming are available (Cary and Toliver 2024, GBIF.org 2024, Pelham 2024, SCAN 2024).

Conservation Considerations:

There are no known conservation actions being taken for this species or subspecies. Due to its habitat of high mountain peaks, most of its distribution is within land managed by the United States Forest Service. Research is needed on this species population size, population trends, as well as more research on threats.

Threats:

This butterfly is a cold-adapted Pleistocene ice age relict, now only residing on high mountain peaks within its range (Scott 1986, Cary and Toliver 2024). Currently 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). Many butterflies respond to climate change by moving to higher elevations or latitudes. However, this is not an option for this taxa, as there are no higher elevation habitats to shift to. (Forister *et al.* 2010, Holland 2010, RÃ¶dder *et al.* 2021, Forister *et al.* 2023).

Inbreeding depression may also be a threat to this butterfly as sub-populations are small and isolated. Inbreeding depression results when slightly deleterious alleles accumulate in a small population, reducing the likelihood of population persistence (Hedrick 1994, Lynch *et al.* 1995). The accumulation of deleterious alleles and reduction in heterozygosity have been shown to reduce survival rates at several important life stages in butterflies, including those that have an effect on population stability and persistence, even after just one generation of mating between full-siblings (Saccheri *et al.* 1998, Nieminen *et al.* 2001). Nieminen *et al.* (2001) also suggests that inbreeding depression may pose an even greater problem in populations with minimal inbreeding in the past. A reduction in fitness resulting from the loss of genetic diversity significantly increases the risk of extinction when populations are subject to environmental stress. Saccheri *et al.* (1998) found that microclimatic conditions combined with inbreeding caused the extinction of a checkerspot population in Finland.

Being a potentially biennial butterfly also leaves this butterfly very vulnerable to stochastic events. Spending two years as a larva with limited mobility leaves them exposed for much longer to environmental stochastic events such as extreme weather, wildfires, and predation (Scott 1986, Cary and Toliver 2024).

Population:

The population size and trend are not known for this subspecies. However, there are some indications that the parent species may be declining. Forister *et al.* (2021) analyzed count data collected over the last few decades by the North American Butterfly Association (NABA). Across two sites a population reduction of 47.8% was estimated over the last ten years (Forister *et al.* 2021). If more data from sites in the southern Rockies corroborates these declines, there is serious cause for concern.

References:

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More Information