Euphilotes ellisii (Ellis Blue)

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Taxonomy

- **Class**: INSECTA
- **Order**: LEPIDOPTERA
- **Family**: LYCAENIDAE
- **Genus**: Euphilotes
- **Scientific Name**: *Euphilotes ellisii* (Shields, 1975)
- **Common Name**: Ellis Blue
- **Synonyms**: Shijimiaeoides battoides ssp. ellisii Shields, 1975
- **Taxonomic Name Source**:Emmel, Thomas C., editor. 1998. Systematics of western North American butterflies. Mariposa Press, Gainesville, Florida. 878 pp.

Agency Status

- **NMDGF**:
- **Federal Status**:
- **BLM Sensitive**:
- **USFS**:
- **IUCN Red List**: Not Evaluated
- **Nature Serve Global**: G3
- **NHNM State**: S1
- **NM Endemic**:NO

Description

Compared to Central Blues, Ellis' males are a paler blue above with a narrower black border. Females may be lighter brown above with a wider orange band. It may be more important to be able to distinguish it from 'Colorado' Rita Blue, with which it is sympatric and synchronic in northwest New Mexico. In that comparison, Euphilotes ellisii has moderately checkered wing fringes; males have a compact pink/orange aurora at the back of the dorsal hindwing with limited development of black dots; and females have a more compact orange band with more prominent black dots at the rear of the dorsal hindwing. Differentiating Ellis' from 'Colorado' Rita Blue based on ventral views only is challenging. In that attempt, look for moderate wing fringe checkering and a light gray ground color on Ellis', compared to slight or limited fringe checkering and white ground color on 'Colorado' Rita. Success is not guaranteed.

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

Habitat and Ecology

This species resides in shrublands and chaparral ecosystems mostly in the Colorado Plateau (Lotts and Naberhaus 2021, Cary and Toliver 2024). This species uses Buckwheats (*Eriogonum spp.*) as its host plant and known host plants include Corybose Buckwheat (*Eriogonum corymbosum*) and Heerman's Buckwheat (*Eriogonum heermannii*)(Lotts and Naberhaus 2021, Cary and Toliver 2024). This species is univoltine with one flight in the late summer usually occurring from mid to late July until early September (Lotts and Naberhaus 2021, Cary and Toliver 2024). New Mexico extreme flight records range from August 6th to September 7th (Cary and Toliver 2024). During flight adults feed on flower nectar, especially flower nectar from their host Buckwheats (Lotts and Naberhaus 2021). Males can be seen

patrolling all day around host plants to find receptive females (Lotts and Naberhaus 2021). After mating eggs are laid singly on Buckwheat flowers the larvae soon emerge and feed on flowers and fruits (Lotts and Naberhaus 2021). Like many *Lycaenidae* species this species is ant tended and overwinters as a pupae in leaf litter or sand near host plants (Lotts and Naberhaus 2021).

Geographic Range:

This species is endemic to the Colorado plateau in the southwestern United States and has been historically recorded in eastern Utah, western Colorado, northern Arizona, and northwestern New Mexico (Brock and Kaufman 2003, Lotts and Naberhaus 2021, GBIF.org 2024). However, there are very few recent observations of this species with just a single observation occurring in the last decade which was made in Utah just north of Moab (GBIF.org 2024). Even in the last forty years the species has only been identified seven times; all of these observations were made in eastern Utah and western Colorado (GBIF.org 2024). This is very concerning and calls into question the status of the New Mexico, Nevada, and California populations. However, some of this lack of observations may be due to the difficulty identifying this species and it might occur in more localities than is currently known (GBIF.org 2024, NatureServe 2024). This species is found at middle elevations, typiclally above 1,525 meters (5,000 feet) (NatureServe 2024). In New Mexico the species is recorded as usually being found between 1,675 to 2,195 meters (5500 and 7200 feet) (Cary and Toliver 2024).

Conservation Considerations:

This species underwent a NatureServe conservation assessment in 2020 and was found to be globally vulnerable to extinction (NatureServe 2024). Only one statewide assessment was completed for the species which was in Colorado and the species was found to be critically imperiled there (NatureServe 2024). Additionally five of the subspecies for *Euphilotes ellisii* were assessed with *E.e. euromojavensis* being assessed as globally vulnerable, *E.e. ellisii*, and *E.e. basinensis* being found to be globally imperiled and *E.e. avawatz* and *E.e anasazi* being found to be critically imperiled (NatureServe 2024). As for conservation needs, identification of the population size and trends of this species will be crucial. Currently this species appears to be extremely rare and possibly declining however more monitoring may find that the population is stable or in more places than previously thought. Additionally, monitoring the habitat for this species for the presence of invasive weeds especially cheatgrass and combatting those invasions when possible will likely be crucial to this species survival.

Threats:

Little research has been done on the threats to this specific taxa. However, there are several inferred threats and life history characteristics that put this species at a significantly increased chance of extinction. The first of these being the species limited geographic range just existing throughout the Colorado plateau while not an extremely small geographic range is limited and geographic range has been shown to be one of the best indicators of extinction risk (Bried and Rocha-Ortega 2023, Forister *et al.* 2023). This species is also host specific with only two known host plants which are closely related Buckwheats (Lotts and Naberhaus 2021, Cary and Toliver 2024). Host specificity is another key indicator of extinction risk in butterflies as if the host declines then these species will decline as well instead of just being able to switch over to other host plants (Kotiaho *et al.* 2005, Palash *et al.* 2022, Forister *et al.* 2023). Furthermore this subspecies is univoltine which puts it at a higher risk of extinction as it reduces the species dispersion range and increases its risk of phenological mismatch making the species less adaptable to and more threatened by climate change (Eskildsen *et al.* 2015, Patterson *et al.* 2019, Forister *et al.* 2023, USFS 2023).

Additionally, this species host plants Buckwheats are highly susceptible to declines from invasive species and wildfires (Tilley 2012). In a recent Nature Conservancy conservation assessment it was stated that all or most populations of

this species are currently very susceptible to invasion and decline due to Cheatgrass invasion (Lotts and Naberhaus 2021). Cheatgrass invasion also increases the frequency and intensity of fires where it invades which can cause further declines in this species. However, currently more research is needed on the threats to this taxa and how they are already affecting its population especially as no information is currently available on how climate change might be affecting this taxa.

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 American west (Forister *et al.* 2021).

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More Information