

Ochlodes yuma anasazi (Rio Grande Gorge Yuma Skipper)



Steve Cary,

Taxonomy

- **Class:** INSECTA
- **Order:** LEPIDOPTERA
- **Family:** HESPERIIDAE
- **Genus:** Ochlodes
- **Scientific Name:** *Ochlodes yuma anasazi* S. Cary and Stanford, 1995
- **Common Name:** Rio Grande Gorge Yuma Skipper
- **Synonyms:**
- **Taxonomic Name Source:** Cary, S. J., and R. E. Stanford. 1995. A new subspecies of *Ochlodes yuma* (W. H. Edwards) with notes on life history and historical biogeography. *Bulletin of the Allyn Museum* 140. 7 pp.

Agency Status

- **NMDGF:**
- **Federal Status:**
- **BLM Sensitive:**
- **USFS:**
- **IUCN Red List:** [Not Evaluated](#)
- **Nature Serve Global:** [T2](#)
- **NHNM State:** S1
- **NM Endemic:** YES

Description

Yuma Skipper is larger and brighter than its sister *Ochlodes* species. Dorsally, Yuma is fulvous (rusty gold) with dark marks along the wing margin. Males have a narrow black stigma. **Comments.** We have one report of the nominate race, from west of the Continental Divide (SJ); it is dorsally orange and ventrally pale gold. More knowledge about this occurrence is needed. New Mexico's best-known colony occurs east of the Divide, in the Rio Grande Gorge (Ta). This is subspecies *Ochlodes yuma anasazi* S. Cary & Stanford 1995, which compared to the nominate form is darker above and dusty ochre below with pale postmedian spots.

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

Habitat and Ecology

This subspecies is dependent on and limited to a single larval host plant, Common Reed (*Phragmites australis*) (Cary

and Stanford 1995, Cary *et al.* 2011). This subspecies only has one brood per year. The overwintering of this subspecies is not well understood but in surveys larvae seem to first appear in April, pupate in July, then adults fly from late July to mid September (Cary and Stanford 1995, Cary *et al.* 2011). Scott *et al.* (1977) described the early stages for the nominate subspecies; *O. y. anasazi* should have similar early stages.

This subspecies spends most of its time within reed beds, where it mates and breeds, and past studies have found that the subspecies rarely travels more than a few meters from its host plant (Scott *et al.* 1977). However, Cary *et al.* (2011) found that this is only partially true within the Rio Grande Gorge; their survey found 93% of individuals within 10m of reed beds. They also found that the subspecies is dispersing up to one kilometer, to use nectar sources in the uplands above the rim of the gorge. Adults are known to nectar on Thistle (*Cirsium* spp.), and Taperleaf (*Pericome caudata*) which can readily be found in the Rio Grande Gorge; they also travel to find Rabbitbrush (*Chrysothamnus nauseosus*), and milkweed (*Asclepias subverticillata*) (Cary and Stanford 1995, Cary *et al.* 2011). Currently, part from the dispersal range of around one kilometer for nectar sources, there is no evidence of migration (Cary *et al.* 2011, NatureServe 2023).

Geographic Range:

This subspecies is known only from Taos County, in northern New Mexico, where it lives in a narrow section of the Rio Grande Gorge. The range extends along a 26 km stretch of river from just north of Chiflo Springs to an area just south of the John Dunn Bridge (Cary *et al.* 2011).

Conservation Considerations:

The New Mexico Department of Game and Fish funded a conservation assessment of the subspecies between 2009 and 2011, which provided the population data and a map of reed beds in the Rio Grande Gorge. This assessment found that the subspecies was not at an immediate risk for extinction, but that if threats to the subspecies became more intense, it could be (Cary *et al.* 2011). Currently this subspecies' entire range is on Bureau of Land Management land, which is protected as a wild and scenic river. However, currently there is no specific management for this subspecies (NatureServe 2023). Renewed surveys are needed to better understand the threats to this taxon, and to verify populations have remained stable since surveys were carried out in by Cary *et al.* (2011) in 2011 and the Natural Resource Institute (2019) in 2017. Monitoring of invasive species and the integrity of habitat patches is also necessary.

Ochlodes yuma anasazi was also identified as a subspecies of greatest conservation need in the Comprehensive Wildlife Conservation Strategy for New Mexico in 2006 but was later removed (NMDGF 2006). It is also considered imperiled throughout its range by NatureServe (2023).

Necessary conservation actions to protect this butterfly include additional research on the population size and trends as well as identifying areas of suitable habitat.

Threats:

This subspecies has a very limited geographic distribution, occurring only in a small section of the Rio Grande Gorge. It is restricted to just a single host plant, Common Reed (*Phragmites australis*) (Cary and Stanford 1995, Cary *et al.* 2011, Natural Resource Institute 2019). The subspecies is also considered to live in just a single metapopulation (Cary *et al.* 2011). As a result of these combined factors, this subspecies is highly susceptible to many threats (Gaston and Fuller 2009, Chichorro *et al.* 2019).

A major threat to this subspecies currently is drought and warming temperatures. New Mexico is getting hotter and drier as the climate changes and this subspecies is a wetland habitat specialist (New Mexico Environment Department 2005). In the last century, 90% of New Mexico's original wetland and riparian ecosystems have been lost, and now comprise less than 1% of the area (New Mexico Department of Game and Fish 2006). As the warming continues, it is predicted that New Mexico will get less mountain snowpack, reduced groundwater recharge, less runoff, and greater evaporative loss (New Mexico Environment Department 2005). A reduction in snowpack and runoff could severely decrease the amount of groundwater recharge in the Sangre de Cristo Mountains. This will likely result in the loss of some of the groundwater-fed seeps and springs, which support many of the larger reed beds this subspecies depend on (Cary *et al.* 2011). The result of this would be less suitable habitat for common reed and therefore a reduction in habitat viability for *Ochloides yuma anasazi* (Cary *et al.* 2011).

Currently, many other butterflies across the western United States are in decline, likely as a result of increasingly dry conditions and warming temperatures (Forister *et al.* 2010, 2021, 2023). Drought conditions and higher temperatures likely decrease nectar quantity and quality; for example, in 2011 during drought conditions, Cary *et al.* (2011) documented that this subspecies had to travel around a kilometer to access good nectar. Intense flooding of the Rio Grande is another threat that could be exacerbated due to climate change. Common Reed is adapted to flooding, but high waters could kill eggs or larvae of the subspecies, and with such a small population size the subspecies may struggle to recover (Cary *et al.* 2011).

Other threats to this subspecies include invasive subspecies; New Mexico's wetland ecosystems are especially vulnerable to invasion by exotic species (New Mexico Department of Game and Fish 2006); Tamarisk (*Tamarix* spp.), Russian Olive (*Elaeagnus angustifolia*) and Siberian Elm (*Ulmus pumila*) are the main offenders (NMDGF 2006, Cary *et al.* 2011). These woody plants tend to form thickets, which could easily shade out and kill common reed, reducing habitat for *Ochloides yuma anasazi* (Cary *et al.* 2011). When surveys were done in 2011, all three of these invasives were documented in the habitat of *Ochloides yuma anasazi*, although at the time their numbers were considered low enough not to require management (Cary *et al.* 2011). Additionally, just east of the Rio Grande Gorge where this butterfly occurs, is the site of the former Molybdenum mine. This mine has been plagued with environmental issues throughout its entire history, repeatedly spilling the contents of waste piles and tailing ponds into the Red River, a tributary of the Rio Grande. During its operation, around 328 millions tons of acid-generating waste rock were excavated and deposited in waste piles (EPA 2017). These waste piles and tailings ponds continue to leach contaminants into local groundwater aquifers, because they are not lined with impermeable material (Cary *et al.* 2011). The primary contaminates are sulfates and other salts, which may increase the salinity of groundwater fed springs in the Gorge. It is unclear how this might impact the host plant, as Common Reed does tolerate some salinity (Cary *et al.* 2011). The mine permanently closed in 2014, has been designated a superfund site, and clean-up is ongoing.

Population:

Mark recapture surveys were carried out in 2017 to get a population estimate for the species (Natural Resource Institute 2019). The population was estimated using the Peterson method to be between 24 and 96 individuals with a median estimate of 64 individuals (Peterson and Cederholm 1984, Natural Resource Institute 2019). However, in the study they mention that this estimate of 64 is likely inflated as they intended to mark as many individuals as possible and so instead of equally sampling all areas, which is an assumption for the Peterson method, they focused their efforts on areas with more individuals, potentially inflating the population numbers (Natural Resource Institute 2019). Additionally, another assumption for the Peterson method is that there will be no arrival or departure of individuals, which was thought to be violated as well, further inflating the numbers. As a result, the authors state that the real population of *O. y. anasazi* is likely between 30-40 individuals (Natural Resource Institute 2019).

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More Information

