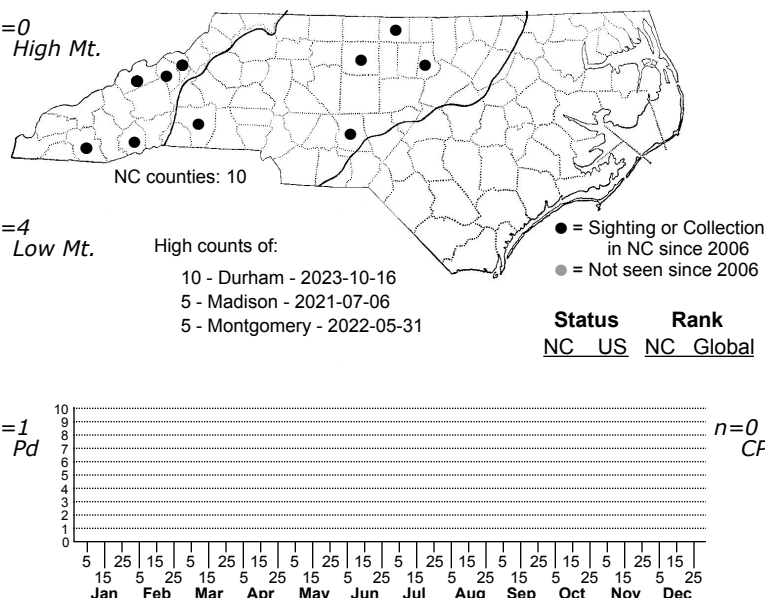
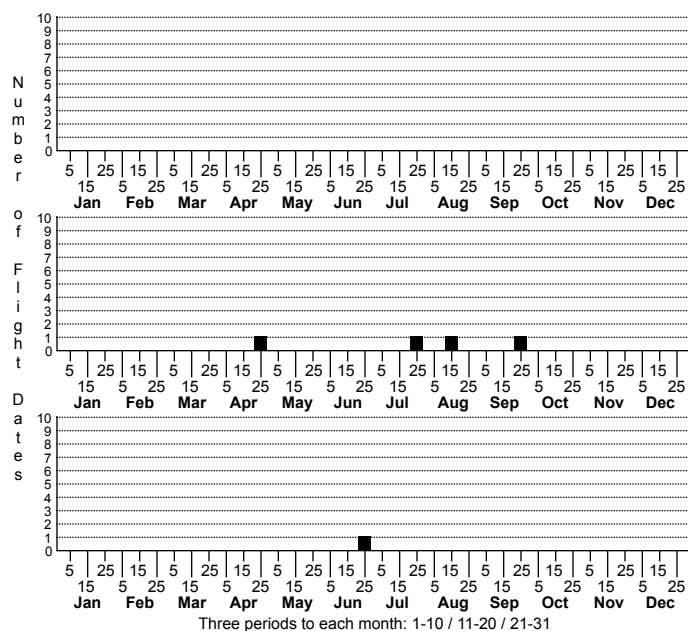


Macrosaccus morrisella None



FAMILY: Gracillariidae SUBFAMILY: Lithocolletinae TRIBE:

TAXONOMIC_COMMENTS: *Macrosaccus* is a small genus of gracillariid moths that mine the leaflets of legumes. There are five described species in Central and North America. Three of the species were previously assigned to the genus *Phyllonorycter* (Davis and De Prins, 2011).

FIELD GUIDE DESCRIPTIONS:

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Davis and DePrins (2011)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Davis and DePrins (2011); Eiseman (2019)

ID COMMENTS: The following is based on a detailed description by Davis and De Prins (2011). The frons is smooth and shiny white, and the vertex is extremely rough. The vestiture consists of a tuft of elongate, piliform, mostly dark brown scales that are intermixed with white scales. The labial palps are white, and the antennae have whitish tips, but are otherwise dark fuscous dorsally. The forewing pattern is complex. The ground color of the costal half is mostly light orange brown, while the basal third and dorsal half of the forewing are usually darker, mostly black to sometimes pale golden gray between the white streaks. There are four equally spaced, white, costal streaks. These are bordered basally by black to dark gray scales and distally by light gray scales. There are three similar white dorsal streaks with dark borders, and the middle streak is connected to the second costal streak to form a narrow white fascia. Finally, a white, narrow, basal streak is present (sometimes obscure) that extends from the wing base for a short distance, and runs roughly parallel to the dorsal margin. A black apical spot is present near the wing tip and the fringe has a dark margin. The hindwing and fringe are uniformly gray. The legs are mostly dark fuscous dorsally with two or three dark annuli or bands on the tibia and tarsal region. *Macrosaccus morrisella*, *M. uhlerella* and *M. robiniella* are very small leaf-miners that superficially resemble one another, but differ in host plants and structural features. *M. morrisella* has a white streak at the base of the forewing (absent or greatly reduced on *M. robiniella* and *M. uhleri*), and the median white fascia is complete (normally broken in *M. robiniella*). In addition, the basal white dorsal strigula is more pronounced on *M. morrisella* and the basal two costal streaks are less oblique.

DISTRIBUTION: *Macrosaccus morrisella* is widespread in eastern North America. Populations have been documented from southern Canada (Manitoba; Ontario; Quebec) eastward to the east coast, and southward and westward to Kentucky, the Carolinas, Texas, and Colorado. Populations in Colorado and Texas appear to be disjunct from the main range. As of 2023, our records for this species extend from the eastern Piedmont westward to the Blue Ridge, where local populations are most commonly found at low and mid-elevations in the central and southern mountains.

FLIGHT COMMENT: Adults outside of North Carolina have been collected during most months of the year during the growing season, but peak activity is July-Sept. As of 2023, we have records that extends from late April through late September.

HABITAT: The host plant (American Hog-peanut) is mostly found in forests and along forest edges with moist soils. It can also tolerate fairly dry conditions (Weakley, 2015).

FOOD: In North Carolina, *M. morrisella* is a specialist on American Hog-peanut (*Amphicarpaea bracteata*), while *M. uhlerella* feeds on false indigo (*Amorpha* spp.) and *M. robiniella* on *Robinia* species (Eiseman, 2022). Outside of North Carolina, *M. morrisella* also uses Slickseed Fuzzybean (*Strophostyles leiosperma*), which is found in the central US. In North Carolina, mines have been recorded only on American Hog-peanut.

OBSERVATION_METHODS: Searching for leaf mines on *Amphicarpaea* may be the best way to locate local populations.

NATURAL HERITAGE PROGRAM RANKS: GNR S3S5

STATE PROTECTION: Has no legal protection, although permits are required to collect it on state parks and other public lands.

COMMENTS: American Hog-peanut is listed as S5, and occupies a fairly wide range of habitats from the Blue Ridge eastward across the Piedmont. On that basis, we estimate that this species is secure within the state, although more information on its distribution, habitat associations, and population trends are needed to more accurately determine its conservation status.