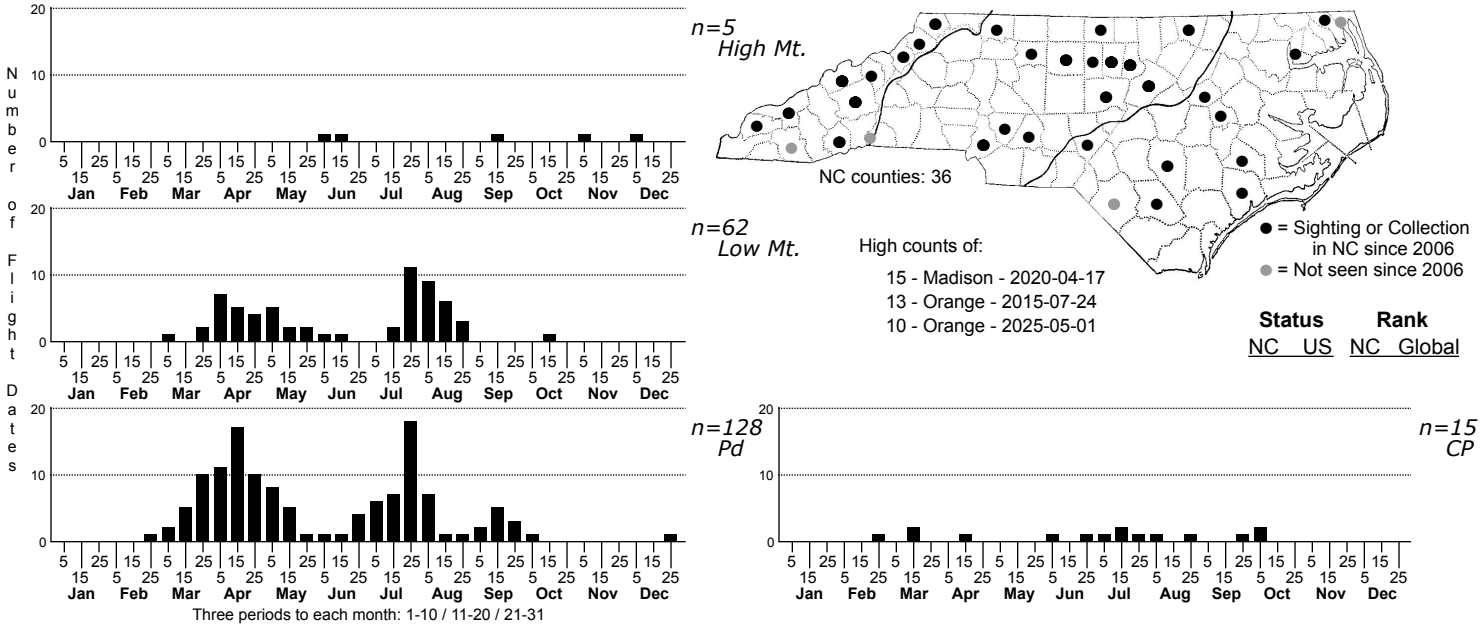
Chionodes mediofuscella Black-smudged Chionodes



FAMILY: Gelechiidae SUBFAMILY: Gelechiinae TRIBE: Gelechiini
TAXONOMIC_COMMENTS: The genus Chionodes is the most species rich genus of gelechiid moths in the Western Hemisphere, with 187 recognized species. Our knowledge of the diverse array of species in North America is largely due to the monumental work of Hodges (1999), who spend decades working on the group and described 115 new species (Powell and Opler, 2009). Many exhibit substantial variation within species and have drab coloration, typically with brown, dark gray, or blackish patterning on the forewings. These can only be confidently identified by examining secondary sexual characteristics and/or the genitalia of one or both sexes. Others are more boldly marked and can be identified by wing patterning. Many of our state records are based on Hodges (1999) database of over 19,000 specimens that he examined from major collections in the US. These include North Carolina specimens that he collected mostly from Highlands, and from a few other areas within the state.

FIELD GUIDE DESCRIPTIONS: Covell (1984); Beadle and Leckie (2012)
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Hodges (1999)
TECHNICAL DESCRIPTION, IMMATURE STAGES: Cave (1977)

ID COMMENTS: This is a distinctively patterned Chionodes, with a clay-colored ground on the wing, and a large blackish region with the anterior portion with a clean-cut oblique edge. The following detailed description is based on that of Forbes (1923) and Hodges (1999). The vertex, thorax, and ground color of the wing is light yellowish brown. The antenna is about three-fourths the length of the forewing and has light pale and blackish annulations. The second segment of the labial palp is yellowish brown with darker dusting, while the third segment is predominantly dark. The light yellowish brown ground of the forewing covers the wing base and extends along the inner margin to the end of the wing. It is narrowest where it meets an oblique, black fascia that begins on the costa at about one-fourth the wing length and slants posteriorly before ending just before the inner margin. The area behind the fascia is filled with varying amounts of heavy blackish dusting or mottling that often fills much of the remainder of the wing. A pale fascia is present at four-fifths that is sometimes interrupted near the middle. It is often masked by the heavy dark dusting. Four or more blackish spots are often evident along the margin of the wing tip. The dorsal surface of the abdomen varies from yellowish white to yellowish brown, and the lower legs are blackish with narrower whitish annulations.

DISTRIBUTION: Chionodes mediofuscella is found throughout much of southern Canada, in coastal regions of the West Coast states, and in much of the central and eastern US, particularly where Giant Ragweed is found. This species is most common in the Piedmont and lower mountains of North Carolina, and relatively uncommon in the Coastal Plain and high mountains.

FLIGHT COMMENT: Adults fly from January through October in areas outside of North Carolina, with a seasonal peak in April through July. As of 2021, we have records from mid-March through early October. Populations in North Carolina have two or more broods per year, with the first breeding bout occurring in March and April.

HABITAT: This species appears to be strongly associated with Giant Ragweed, which is common in wet, sunny, alluvial soils or in disturbed sites that favor seed germination. Examples include seasonally flooded fields, the edges of agricultural fields, construction sites, and floodplains with fresh alluvial deposits.

FOOD: Cave (1977) and Forbes (1923) reported that the larvae feed on the seeds of Giant Ragweed (Ambrosia trifida). They appear to rely heavily on this one species and do not use coexisting populations of A. artemisiifolia. Chionodes mediofuscella is found in areas of the Atlantic Coastal Plain where Giant Ragweed does not grow, so secondary hosts are likely used here and at other locales in North America. Ken Kneidel recent reared an adult that emerged from ornamental Zinnia seed heads, which is new host record for this species. It supports the idea that this species likely uses native hosts other than Giant Ragweed that have yet to be documented as of 2025.

OBSERVATION_METHODS: The adults are attracted to lights.

NATURAL HERITAGE PROGRAM RANKS: GNR S4S5

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

COMMENTS: This species is locally common in North Carolina and populations appear to be secure in the state.