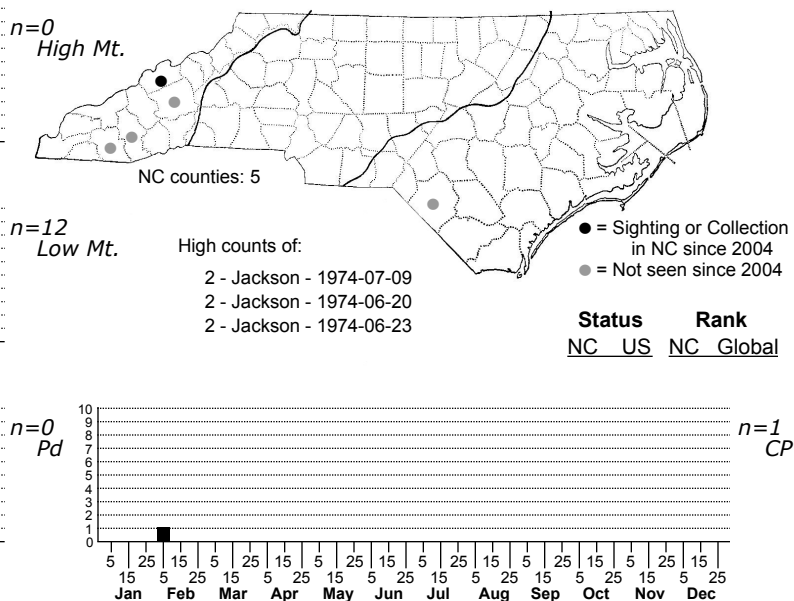
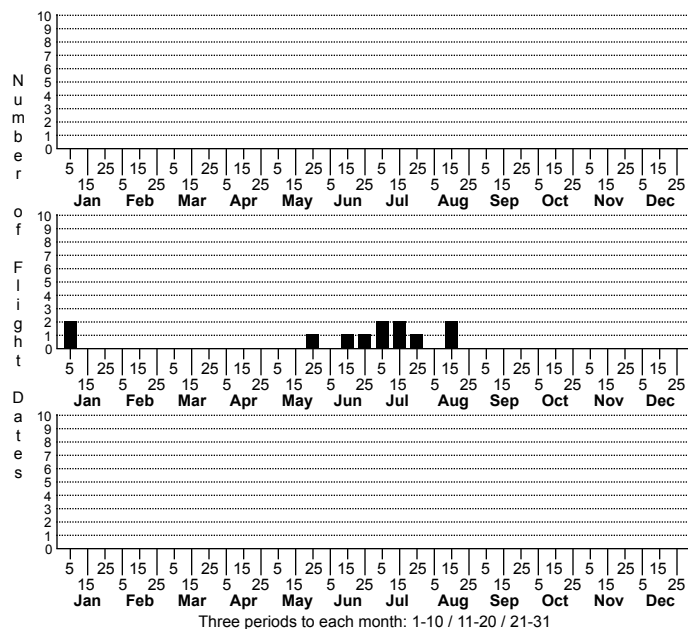


# *Chionodes fuscomaculella* White-spotted Chionodes



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:

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Hodges (1999)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Marquis et al. (2019)

ID COMMENTS: The head and thorax are brownish to dark gray and similar to the ground color of the forewing. The antenna has alternating pale and blackish or fuscous bands. The second segment and base of third segment of the labial palp is mainly off-white, while much of the third segment except the extreme tip is heavily dusted with fuscous to blackish scales. The forewing has a grainy brownish to dark gray ground color that is overlain with darker blotches and pale-yellow to pale-orange spots. A small pale spot is usually present at the base of inner margin and immediately posterior to the thorax when the wings are folded. A pale costal spot is present at four-fifths the wing length that adjoins a darker spot anteriorly. The pale spot often has a matching pale dorsal spot, and the two are sometimes connected by a thin pale line to create a complete fascia at four-fifths. A dark, oblique band or blotch is usually present that begins on the costa at about two-fifths and slants posteriorly before terminating just before the inner margin. This is sometimes represented as an irregular blotch or series of two or three smaller blotches. A series of small pale-yellow or pale-orange spots or scales, along with larger dark blotches, are usually present in addition to the marks described above. Hodges (1999) noted that at least part of the wing has scales with dark-colored scale bases. The legs have alternating pale and blackish bands, with pale scale tufts.

This species is similar to several other *Chionodes*, and the genitalia offer little help in distinguishing between closely related forms. In the East, *C. fuscomaculella* and *C. bicostomaculella* are most easily confused. Hodges (1999) noted that *C. bicostomaculella* tends to have the scales of the upper surface shades of black, gray, and white with a slight bluish-gray cast. This species almost always lacks any yellow scales, whereas specimens of *C. fuscomaculella* usually has pale-yellow scales at least on the basal two-thirds of the wing. In addition, the forewing usually has a warm, slightly yellowish hue. The larvae are distinctive, and the adults can be easily reared from larvae.

DISTRIBUTION: *Chionodes fuscomaculella* is found in eastern North America. The range extends from the New England states and areas of extreme southern Canada (Manitoba; Ontario; Quebec; Nova Scotia) southward to Florida, and westward to central Texas, Oklahoma, Missouri, eastern Iowa, and Wisconsin. As of 2021, all but one of our records are from the mountains.

FLIGHT COMMENT: Adults have been found from January through October in areas outside of North Carolina, with most between May and September. As of 2021, our records are mostly mid-June through mid-August in the mountains, with three January and early February records that likely were overwintering adults.

HABITAT: Local populations depend on hardwood forests where they feed on oaks, chestnut, and other hardwoods. Most of our records are from mesic sites in the mountains, although oaks that grow on drier sites are frequently used as hosts elsewhere.

FOOD: The larvae are polyphagous (Hodges, 1999; Robinson et al., 2010; Marquis et al., 2019). They feed primarily on oaks, but have also been reared from a hickory (*Carya* sp.), American Chestnut (*Castanea dentata*), and American Beech (*Fagus grandifolia*). Oaks that are used include White Oak (*Quercus alba*), Scarlet Oak (*Q. coccinea*), Shingle Oak (*Q. imbricaria*), Bur Oak (*Q. macrocarpa*), Chinquapin Oak (*Q. muehlenbergii*), Pin Oak (*Q. palustris*) and Willow Oak (*Q. phellos*). As of 2024, we have one record for White Oak.

OBSERVATION\_METHODS: The adults are attracted to lights, and the distinctive larvae can be found within leaf ties on oaks and other hosts.

NATURAL HERITAGE PROGRAM RANKS: GNR S2S4

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

COMMENTS: Our records are based on identifications by Hodges (1999). While we have no recent records, this species is common throughout the eastern US, and populations in North Carolina are likely to be secure.