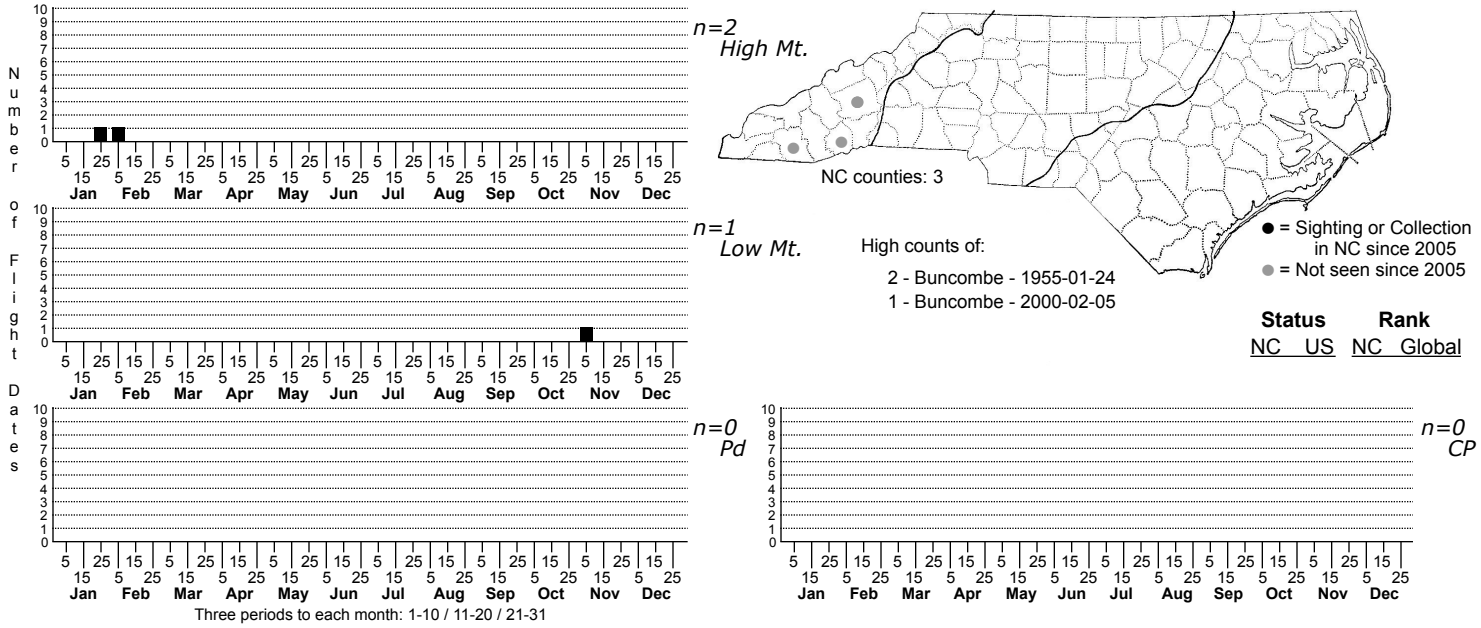
# ***Chionodes formosella*** Spring Oak Leafroller Moth




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: Beadle and Leckie (2012)
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Hodges (1999)
TECHNICAL DESCRIPTION, IMMATURE STAGES:

ID COMMENTS: The following description is based on that of Hodges (1999). The head and thorax are mainly dark gray. The antenna is very dark gray, and nearly black on the dorsal surface. The second segment of the labial palp is slightly reddish brown on the distal part of the scale tuft. The third segment is mostly black, except for a white base that has a few gray scales on the distal half. The forewing ground color is medium to dark gray on the basal two-thirds, and very dark gray to black on the apical third. An irregular, oblique, black band is present at one-half the wing length. It extends from the costal margin to beyond the fold, but does not reach the inner margin. A prominent costal white mark is present at three-fourths the wing length, and there is a matching one on the inner margin that is smaller and sometimes rather faint. There are usually a few pale yellowish to orange-gray scales that follow a nearly black spot at one-half the length of the cell, and precede a similar mark at the end of the cell. The legs are blackish with pale yellowish white bands and annulations. The tibial spurs are pale yellowish white, with a few medium-gray scales on the outer surface. The abdomen is shining gray dorsally. This species is similar to Chionodes fuscomaculella, but the apical one-third is uniformly dark colored and lacks the grainy salt-and-pepper texture of C. fuscomaculella. The colored scales usually are shades of orange gray, not yellow as is more typical of C. fuscomaculella. Males of C. formosella also lack hair pencils on the hindwing.

DISTRIBUTION: Chionodes formosella occurs from Nova Scotia to southwestern Manitoba, and south along the Appalachians to North Carolina and to eastern Missouri (Hodges, 1999). As of 2021, we have records from both lower and higher elevation sites in the Blue Ridge Mountains.

FLIGHT COMMENT: Hodges (1999) reported the flight season to be from early-May to late-September, with a peak in seasonal activity from late May to mid-August. Records for North Carolina that were identified by Hodges (1999) were from November, January, and February, which are inconsistent with other records and are likely rearing records.

HABITAT: This species is generally associated with hardwood forests with oaks, and typically from habitats with mesic to somewhat drier soil conditions.

FOOD: The known hosts include oaks and Hop-hornbeam (Ostrya virginiana). The adults have been reared from White Oak (Q. alba), Shingle Oak (Q. imbricaria), Laurel Oak (Q. laurifolia), Northern Red Oak (Q. rubra), and Black Oak (Q. velutina) (Heppner, 2003; Hodges, 1999). Marquis et al. (2019) found larvae that are consistent with this species on additional oaks in Missouri, including Scarlet Oak (Q. coccinea), Blackjack Oak (Q. marilandica), Post Oak (Q. stellata).

OBSERVATION_METHODS: The adults are attracted to lights. We need more information on the larval ecology and life history of this species in North Carolina, so we encourage individuals to seek out and document aspects of the larval biology.

NATURAL HERITAGE PROGRAM RANKS: GNR SU

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

COMMENTS: We currently do not have sufficient information on the distribution and abundance of this species to assess its conservation status.