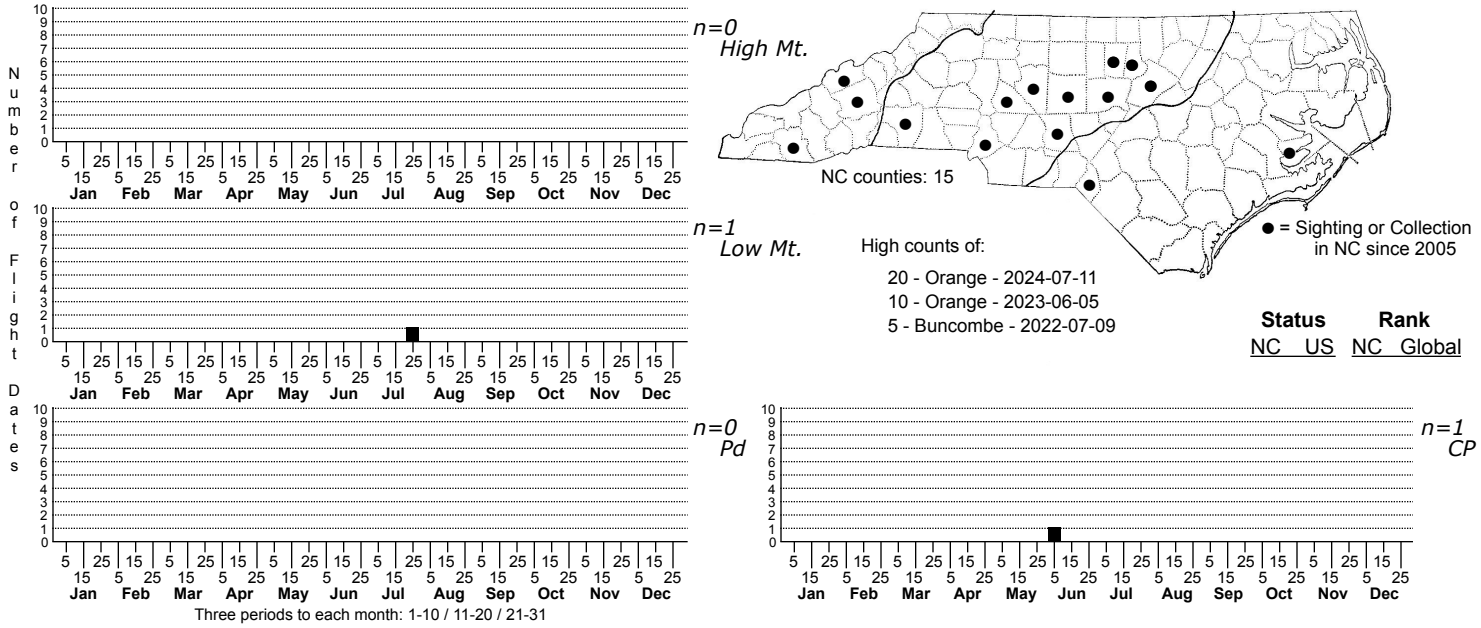
Coptodisca lucifluella None



FAMILY: Heliozelidae SUBFAMILY: TRIBE:
TAXONOMIC_COMMENTS: This New World genus includes 18 described North American species of small leaf-mining moths, as well as several undescribed species. When mature, the larva cuts a disc of tissue out of the leaf and uses it to form a cocoon. All known species of Coptodisca feed on woody plants, and most are restricted to a single plant genus.

FIELD GUIDE DESCRIPTIONS:
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS:
TECHNICAL DESCRIPTION, IMMATURE STAGES:

ID COMMENTS: The following description is primarily based on Chambers (1874). The head, thorax and much of the basal half of the forewing are silvery white to light gray, while the remainder of the forewing has complex patterning that includes several silvery streaks or patches on a dark brown to blackish ground color. The blackish ground color occurs along the dorsal margin (sometimes narrowly extending towards the base of the wing) and spreads inwardly beyond the mid-point where it is replaced by a golden yellow costal region. A large silvery white triangular costal patch with convergent black borders occurs just beyond the mid-point and is bordered on either side with golden orange. A second large triangular patch occurs along the inner margin that is opposite and slightly anterior to the first costal patch. This patch is surrounded by the dark ground color that extends to the base of the cilia. Near the wing tip there is a small silvery costal patch at the apex with a black margin on the anterior edge. A large, fan-shaped apical patch occurs at the end of the wing that sometimes has a dark streak that extends to the apex of the cilia. Near the base of the apical patch there is a very small white spot on both sides of the patch. This species has wing patterning that is similar to several closely related Coptodisca (e.g., C. ostryaefoliella, C. saliciella and C. splendoriferella), but each specializes on different host plants. On C. lucifluella the dark ground color on the forewing extends forward well beyond the large triangular mark on the inner margin. As a result, the golden orange area toward the apex forms a broad band that is restricted to the costal third of the wing. On related species, this area is replaced with golden orange coloration that extends well beyond the costal third of the wing and often all the way to the inner margin. Male genitalia of Coptodisca are difficult to dissect and embed in a fixed position. Reliable identification can be achieved by rearing adults from their host plants or through DNA analysis.

DISTRIBUTION: Coptodisca lucifluella occurs throughout much of eastern North America, from Ontario and Massachusetts, southward to Georgia, and westward to Wisconsin and eastern Texas (Eiseman, 2019). Populations have been introduced in New Mexico, Mexico and Italy. Populations in Italy have shifted hosts to walnuts (Juglans) and have become significant pests in commercial orchards (Bernardo et al., 2015). The few records that we have for North Carolina as of 2022 are from all three physiographic provinces.

FLIGHT COMMENT: Populations are multivoltine and are active from shortly after the spring leaf-out through September or October. Clemens (1860) found mines with larvae in September and October. Individuals pupated in October, then overwintered and emerged as adults in June.

HABITAT: Coptodisca lucifluella is a specialist on hickories and is found is found in a variety of forested habitats with hickories.

FOOD: The reported hosts include Pignut Hickory (C. glabra), Pecan (C. illinoinensis), Shagbark Hickory (C. ovata), Mockernut Hickory (C. tomentosa), and Black Hickory (C. texana) farther to the west (Eiseman, 2019). This species was recently introduced into Europe where it subsequently switched hosts to walnuts (Bernardo et al., 2015). As of 2024, we have records from Shagbark Hickory, Pignut Hickory, Shellbark Hickory (Carya laciniosa), Bitternut Hickory (C. cordiformis), Red Hickory (Carya ovalis), and either a Mockernut or Sand Hickory (C. pallida; identity of the host was uncertain).

OBSERVATION_METHODS: Adults occasionally visit lights and the leaf mines are often readily evident on hickory leaves. This species has a very brief generation time and adults have been successfully reared from leaf mines or pupal cases.

NATURAL HERITAGE PROGRAM RANKS: GNR S2S4

STATE PROTECTION:

COMMENTS: We currently do not have sufficient information on the distribution and abundance of this species in North Carolina to assess its conservation status. However, it generally appears to be uncommon throughout the state.