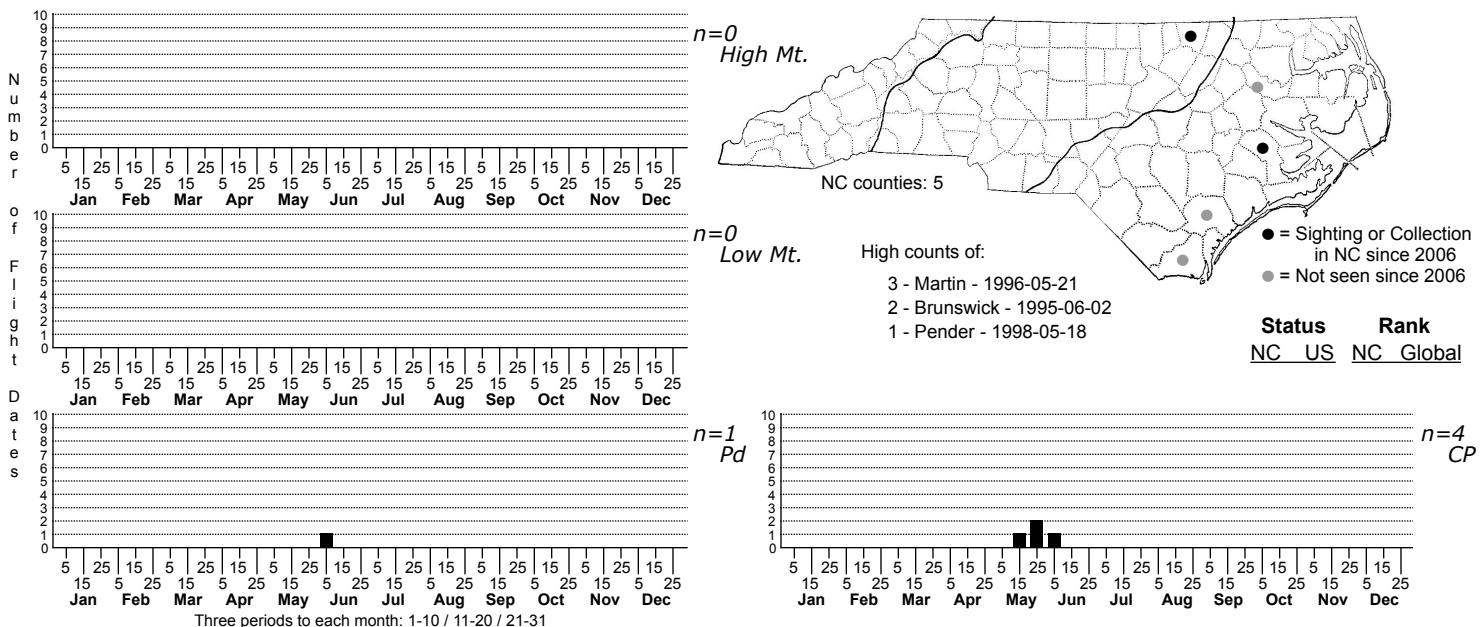


# *Catocala lincolnana* Lincoln Underwing



FAMILY: Erebidae SUBFAMILY: Erebinae TRIBE: Catocalini

TAXONOMIC COMMENTS: One of 103 species in this genus that occur in North America (Lafontaine and Schmidt, 2010, 2015), 67 of which have been recorded in North Carolina. Included by Barnes and McDunnough (1918) in their Group XVII (also adopted by Forbes, 1954), which feed mainly on members of the Rosaceae; 12 other members of this group (as redefined by Kons and Borth, 2015b) also occur in North Carolina.

FIELD GUIDE DESCRIPTIONS: Covell (1984)

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Brower (1976); Schweitzer et al. (2011)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Schweitzer et al. (2011); Wagner et al. (2011)

ID COMMENTS: A medium-sized *Catocala* with strongly contrasting median and basal areas on the forewing and with yellow-and-black banded hindwings. Like *Catocala crataegi* and *Catocala blandula*, *C. lincolnana* has an arc of dark brown that sweeps down the antemedian and across the inner margin, in some cases reaching the anal angle. The median area of the wing is contrastingly pale but dusted with brown or gray; the apex is usually somewhat darker, similar to the basal area. The reniform is white but often obscure; the subreniform is typically more conspicuous and filled with light brown. The hindwings are banded with black and orange, following the usual *Catocala* pattern. *C. lincolnana* is larger than the other members of this group and the median area is a light tan rather than the white or blue-gray shades found in *C. pretiosa* and *C. crataegi*.

DISTRIBUTION: All of our records come from the Coastal Plain, where it appears to be restricted to the floodplains of brownwater rivers and wet marl forests.

FLIGHT COMMENT: Adults fly in late May to early June.

HABITAT: Rich alluvial forests and swamp margins associated with brownwater rivers. Also occurs in similarly rich, wet hardwoods associated with outcrops of marl. We have no records from drier, sandier, or more acidic habitats.

FOOD: Larvae are stenophagous, feeding on hawthorns (*Crataegus* spp.). Florida populations have been found in association with Parsley Hawthorn (*C. marshallii*), a species often associated with mafic or calcareous soils in both floodplains and uplands (Weakley, 2016). A population of this species has been documented along the Roanoke River where the moth was first found in the state. Other hawthorns are also present, however, and the Florida distribution of the moth suggests that a range of hawthorns is used (Schweitzer et al., 2011). Wagner also lists Littlehip Hawthorn (*C. spathulata*), which is quite rare in North Carolina and outside the range of our records. We do not have any feeding records in North Carolina.

OBSERVATION\_METHODS: Good samples of this species were obtained on the Roanoke River using 15 watt blacklight traps; it also came to bait in the same area.

NATURAL HERITAGE PROGRAM RANKS: G3G4 S2S3

STATE PROTECTION: Listed as Significantly Rare by the Natural Heritage Program. That designation, however, does not confer any legal protection, although permits are required to collect it on state parks and other public lands.

COMMENTS: This species appears to be rare throughout its range and is only known in North Carolina from three sites. It does not appear to be reluctant to come to the usual methods of attraction and its rarity appears to be more due to host plant and habitat restrictions. Much of the vast bottomland forests it probably once occupied have been heavily exploited for timber over the past 150 years and existing populations may be highly vulnerable to spraying to control Gypsy Moths. The Roanoke River site where this species was first discovered in North Carolina was, in fact, treated for Gypsy Moths shortly after its discovery, although some mitigation was provided by using pheromone flakes -- a highly Gypsy Moth-specific control agent -- within the area where *Catocala lincolnana* (along with *C. orba*) was documented to occur. The rest of the area, however, was sprayed with Btk, a control agent that affects a large range of Lepidopteran species (see Hall et al., 1999). As pointed out by Schweitzer et al. (2011), *C. lincolnana* may be particularly vulnerable due to its early emergence in the spring, with young instar larvae present during the time the spraying is done. No monitoring was done post treatment, however, and the effect on the native moth populations is unknown.