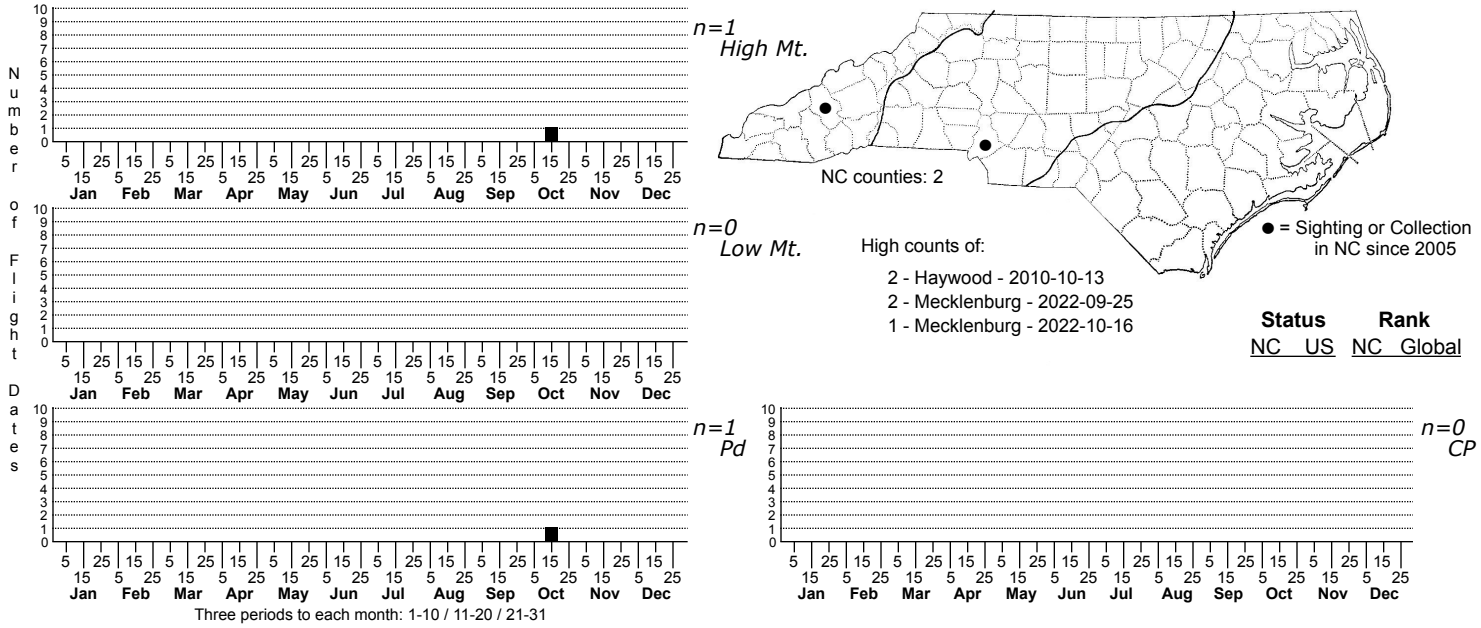
Phyllonorycter salicifoliella Willow Leaf Blotch Miner Moth



FAMILY: Gracillariidae SUBFAMILY: Lithocolletinae TRIBE:
TAXONOMIC_COMMENTS: Phyllonorycter is a genus of small and often colorful moths, with 79 described species in North America. The larvae of most form underside tentiform mines on woody plants and pupate within the mines.

FIELD GUIDE DESCRIPTIONS:
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Davis and Deschka (2001)
TECHNICAL DESCRIPTION, IMMATURE STAGES: Davis and Deschka (2001)

ID COMMENTS: Davis and Deschka (2001) provided a comprehensive review of the Salix-feeding Phyllonorycter species and noted that this wide-ranging species exhibits the greatest amount of morphological variation of any North American Phyllonorycter. Variation occurs in both external features and the genitalia and has caused much confusion among workers. As an example, adults that were mostly reared and previously identified as P. salicifoliella by a highly respected and knowledgeable worker on the Gracillariidae contained representatives of five species of Phyllonorycter. Most of the confusion reflects variation in the forewing pattern and male genitalia. The genitalia tend to show normal within-population uniformity but also exhibit conspicuous between-population differences that in some cases may occur between adjacent populations. Genitalia and DNA bar-coding probably provide the most reliable way to identify specimens. The following description is based on Davis and Deschka (2001).

The adults tend to fall into two general types that include a heavily dusted dark form and a much brighter and boldly marked whitish form. The head tuft is rough and has variable mixtures of white and brown scales that are usually mostly white. The antenna has a scape and pedicel that is usually entirely white, but occasionally slightly brownish dorsally. The flagellomeres are variable, but are usually mostly white with a brownish suffusion over the dorsal apex. In some cases they can be mostly brown with whitish basal annulations. The labial palp is either entirely white or with a brownish suffusion ventrally. The dorsum of the thorax is usually white and lightly irrorated with dark brown to fuscous, but sometimes can be mostly reddish brown.

The forewing is slender and golden brownish and usually has five costal and four dorsal white streaks. There is also a dorsal white spot at the base of the wing that can vary from being large and prominent in the lighter forms to greatly reduced in the darker forms. The ground color of the forewing varies from light golden to reddish brown and is variably marked with white streaks and scattered dark brown to fuscous scales. There are five whitish costal streaks, with the basal two the most oblique. These are sometimes indistinct in dark specimens. There is usually a large, white basal spot on the dorsum that in dark specimens may be largely obliterated by reddish brown scales. Four white dorsal streaks are usually present beyond the basal spot. The basal two are the broadest and are sometimes joined to the costal streaks. The outer two streaks are narrower, and the costal and dorsal pairs are often joined, but with the distal-most band usually separated by an elongate, subapical fuscous spot. The termen has a fuscous margin and the fringe is pale gray. The hindwing is uniformly gray, while the legs are generally light fuscous dorsally and become progressively paler on the mid- and hind legs. The apices of the tibial and tarsal segments are white.

DISTRIBUTION: This species is widely distributed across North America from Mississippi to Ontario in the East and from southern California to northern British Columbia in the West. Populations also have been found in the central Rocky Mountains, the Ozarks, and in the southern Appalachians. As of 2022, we have one verifiable record from Haywood County in the western mountains.

FLIGHT COMMENT: Phyllonorycter salicifoliella appears to be bivoltine in many areas of the range, particularly where populations are found at lower elevations or in the southern portion of the range (Davis and Deschka, 2001). The mines are first produced in July to mid-August, with a second brood mining from late August to November. The adults overwinter and begin flying in May to early June after the spring warm-up.

HABITAT: This species is typically associated willow thickets and to a lesser extent poplar stands.

FOOD: The larvae mostly mine willow leaves, but will occasionally feed on poplars, particularly Balsam Poplar (P. balsamifera) and Quaking Aspen (P. tremuloides) (Eiseman, 2022). A variety of willows are used (Davis and Deschka, 2001), many of which are found at northern latitudes or in western North America. These include White Willow (Salix alba), Peachleaf Willow (S. amygdaloides), Weeping Willow (S. babylonica), Bebb's Willow (S. bebbiana), Bonpland willow (S. bonplandiana = laevigata), Carolina Willow (S. caroliniana), Missouri River Willow (S. eriocephala), Arroyo Willow (S. lasiolepis), Yellow Willow (S. lutea), Mountain Willow (S. monticola), Purple Willow (S purpurea), Scouler's willow (S. scouleriana), and Silky Willow (S. sericea). In North Carolina, larvae have been reared from Black Willow (S. nigra).

OBSERVATION_METHODS: Local populations are best documented by rearing adults from mines on willows.

NATURAL HERITAGE PROGRAM RANKS: GNR SU

STATE PROTECTION:

COMMENTS: This mostly northern species appears to be rare in North Carolina. As of 2022 we have only one verifiable record from a site in Haywood County.