

Savannah Willowfly

Taeniopteryx robiniae Kondratieff and Kirchner

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DESCRIPTION

Taxonomy and Basic Description

Kondratieff and Kirchner (1984) described *Taeniopteryx robiniae* from Meyers Branch at the Savannah River Site in Barnwell County, South Carolina. Currently, 11 species (Stewart 2000; DeWalt et al. 2011) are recognized from North America. Most of these species are widespread in distribution, but *T. robiniae* appears restricted to South Carolina. Adults of *Taeniopteryx* emerge during winter and early spring months, often called “early black” (Stark et al. 1998) or “winter stoneflies,” with adults of *T. robiniae* having been collected from December into January. The adult male has a forewing length of 6-8 mm (0.24-0.31 in.) and can be distinguished from all other *Taeniopteryx*, especially of *T. maura* complex, by the paraprocts being L-shaped with the tips rounded and sternum 9 connate. Additionally, the aedeagus is globular with two lateral lobes wrapped laterodorsally and two ventral lobes. The female adult has a forewing length of 9-10 mm (0.35-0.39 in.) and is distinguished by the incomplete medial U-shaped notch of sternum 8. The brown nymph, with a prominent yellow middorsal stripe on the thorax abdomen, can be separated by the long curved setae on the posterior margins of the terga and the lack of a large pale rectangular patch on the middle portion of the head.

Status. The Savannah Willowfly is globally ranked as Critically Imperiled (G1) which means it is at a very high risk of extinction due to a very restricted range, very few populations (often 5 or fewer), steep declines, or other factors (NatureServe 2011). The species is currently not ranked in South Carolina.

POPULATION SIZE AND DISTRIBUTION

The Savannah Willowfly is currently only known from a single small stream: Meyers Branch in the Steel Creek watershed of the Savannah River Site in Barnwell County, SC. Population size has not been determined.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Meyers Branch, at the time of description, was an unimpacted stream (Kondratieff and Kondratieff 1984) characterized by shallow riffles and pools with a substrate of course sand covered in spots by gravel. Many snags and leaf accumulations occurred throughout the stream. The larvae of *T. robiniae* were associated with leaf packs. Canopy cover was about 80-90% composed of sycamore, sweet gum, holly and willow oak.

CHALLENGES

Despite the fact that Meyers Branch is located on the Savannah River Site, this landscape has a long history of chemical contamination (Burger et al. 2001), and investigations are necessary to confirm the conservation of this species.

CONSERVATION ACCOMPLISHMENTS

Meyers Branch is entirely within the Savannah River Site and apparently remains mostly protected from development.

CONSERVATION RECOMMENDATIONS

- Surveys for the Savannah Willowfly should be made at the type locality and nearby similar streams.
- Evaluate and develop a long-term management program for water quality of the Meyers Branch watershed
- Encourage long-term Best Management Practices (BMPs) in the watershed of Meyers Branch.

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