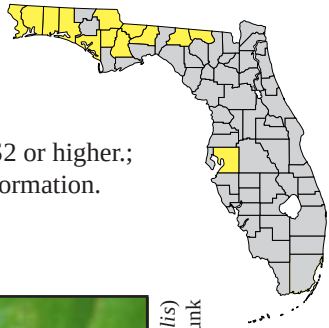
RARE MAYFLIES



Order: Ephemeroptera
Family: 10 families
FNAI Ranks: At least 17 species ranked S2 or higher.; contact FNAI for further information.
U.S. Status: None
FL Status: None

adult (*Pseudiron centralis*) © David H. Funk

nymph (*Stenonema modestum*) © David H. Funk

Description: Small to medium-sized (0.5 - 1 in. = 13 - 25 mm body length without tails; wingspans up to 2 in. = 50 mm), elongate, very soft-bodied insects with delicate, many-veined, transparent wings that are held together vertically when at rest, and two or three long, threadlike tails (filaments) at end of abdomen. Wings usually membranous and shiny, though dull and cloudy in brief pre-adult stage; front pair large and triangular, hind pair small and rounded or even absent in some species. Eyes large; mouthparts very reduced; antennae small, bristle-like, and inconspicuous; legs slender and weak. Adult cannot feed and usually lives only a day or two. Immature aquatic stage (nymph) requires a year or more to develop and is very different from adult; usually elongate (to about 1 in. = 25 mm), with leaf-like gills along sides of abdomen, three (rarely two) long, fringed tail filaments, very small wing pads on back, and stouter legs and mouthparts

than adult. Because most mayflies are superficially similar and distinguished by fine details, identification of species should be confirmed by an expert.

Similar Species: Stonefly nymphs (order Plecoptera) are similar but have only two tail filaments; their gills are not leaf-like and usually attach to thorax (mid-body region to which legs and wings attach) rather than abdomen.

Habitat: Streams, rivers, and adjacent woodlands. Eggs are laid on water surface or on vegetation or objects in water. Nymphs remain in water until emergence as winged pre-adults, which molt into final adult stage that may form brief breeding swarms in habitats adjacent to water. Nymphs of some species burrow in sand or mud, while others crawl on bottom or vegetation or hide under stones and wood.

Seasonal Occurrence: Nymphs present much of year in fresh waters, but terrestrial adults of most species exist for only a few days to two weeks; season depends upon species.

Florida Distribution: Most rare species occur along streams and rivers of panhandle. Highest diversity occurs in Blackwater and Yellow river systems, with fewer species in Apalachicola, Ochlockonee, Escambia, Withlacoochee (Suwannee), Choctawhatchee Bay, and Pine Log Creek drainages.

Range-wide Distribution: Most rare Florida species are restricted to lower Southeastern Coastal Plain, from Mississippi to North Carolina. A few are limited to Florida or extend just into southern Alabama.

Conservation Status: Large portions of two most important drainages, Blackwater and Yellow river systems, occur within or along Blackwater River State Forest and Eglin Air Force Base. However, all stream systems inhabited by mayflies face potential threats.

Protection and Management: Protect stream and river systems and adjacent upland habitat from all forms of degradation, including pollution, siltation, and impoundment. Protection must extend upstream into adjacent states, especially Alabama. Critical to prevent timber harvest, soil excavation, and road-building within and above all slopes draining into streams.

Selected References: Berner and Pescador 1988, Deyrup and Franz (eds.) 1994, Pennak 1978.