

Trichoptera

Trichoptera (caddisflies) are the most diverse and abundant organisms in freshwater habitats. They are important trout food sources and make up the majority of a trout's diet.

Trichoptera comes from the Greek words for hairy wings and with close inspection, this description is very appropriate. They undergo the same metamorphosis as moths and butterflies do. In fact, moths, butterflies and caddisflies are classified under the superfamily Amphiesmenoptera, meaning "dressed up wing." Trichoptera diverted from this evolutionary path when they developed respiratory systems that allowed them to be aquatic.

Trichoptera is a small order with only about 11,500 known species worldwide. There is an estimated 30,000 species yet to be described! North America has 26 known families with 23 of these familiar found in the eastern US.

Their life cycle takes nearly a year to complete, beginning with the initial egg. There are a few requiring two years to mature. Caddisfly larvae have a large range of temperatures, water quality, oxygen levels, food availability, and water currents in which they can survive and thrive. Most eggs will hatch in 2-4 weeks with some needing 9 months. Once hatched, the larvae have 5 stages of growth (called instars), normally completed in 6-10 months. Equally unique are the distinct pupal cases or shelters each larval species creates.

Adult caddisflies live 1-4 weeks, depending on the weather conditions. Once females are ready to lay their eggs, they return to their larval site. There are 4 basic egg-laying behaviors: 1) laying eggs beneath the water, 2) laying eggs on the water's surface, 3) doing both, and 4) laying eggs at the edges of water.

Identification of Trichoptera is difficult. For the vast

majority of caddis you cannot confidently use color. About 33% of the adults have been matched to their larvae. There are a couple books that cover the caddis genera fairly well as adults and larvae. But the species level literature requires numerous bookcases/file cabinets. Most females are more difficult to identify to species. In many genera (Nectopsyche, Wormaldia and others) they may be impossible to determine without using DNA. And many females have yet to be associated with their male.

Hydropsychidae (Netspinning Caddisflies)

Hydropsyche alhedra

Hydropsyche alternans

Hydropsyche betteni

Hydropsyche bronta

Hydropsyche incommoda

Hydropsyche simulans

Potamyia flava

Hydroptilidae (Microcaddisflies)

Leucotrichia sp – Ring Horn Microcaddis

Lepidostomatidae (Bizarre Caddisflies)

Lepidostoma sp

Leptoceridae (Long-horned Caddiflies)

Ceraclaea maculata

Cheumatopsyche sp

Nectopsyche sp

Oecetis inconspicua

Triaenodes tardus

Limnephilidae (Northern Caddisflies)

Hydatophylax argus – Giant Cream Pattern wing Sedge

Hesperophylax designatus

Phryganeidae (Giant Casemakers)

This family of caddisflies make their habitats in everything from cool flowing water to warm flowing water, from ponds &

lakes to temporary pools. The larvae are swift and will leave their case if disturbed. Some will return to the same one, others will use another option. Their cases are smooth cylinders made from plant debris, sometimes arranged in a neat spiral.

Phryganea sp – Giant Casemaker

Ptilostomis ocellifera – Giant Rusty Sedge Caddisfly

These seem to be able to thrive in most any habitat, which is unusual because they are considered a “primitive” genus. They are the most common of the 4 North American species

Uenoidae (Stonecase Caddisflies)

Neophylax sp – Autumn Mottled Sedge