

# WATER STRIDER

O: *HEMIPTERA* F: *GERRIDAE*



Water striders skate along the water surface hunting for small invertebrate prey.

They hunt small surface-dwelling invertebrates and are important predators of adult mosquitos and other insects that rest on the water surface just after emergence from their aquatic larval stage. While they spend most of their time striding along the water surface, they are good fliers and can disperse widely.

## ADULTS

Water striders (.25-.5") are semi-aquatic insects that walk on the water surface of vernal pools and other water bodies. Water striders contact the water with all of their legs. You might first notice them by the unique 4-ringed shadow they cast on the pool bottom when at rest with the forelegs held ready to capture prey. Their legs end in tufts of dense hairs that prevent them from breaking the surface tension, keeping them afloat. Their slender bodies, and water walking habits make them distinctive and unmistakable.

# FISHFLY

O: *MEGALOPTERA* F: *CORYDALIDAE*



Fishflies have long, stout bodies with a pair of gills (lateral filaments) on each segment.

## LARVAE

Fishfly larvae (to 2") have a dark, shiny head with stout, pinching mandibles used to capture and subdue aquatic insects and other invertebrate prey. Their long, relatively stout bodies are distinctive in having 8 paired lateral gills. The gills look much like a single spine on either side of each segment. The lateral gills, and a pair of terminal siphons characteristic of species most often found in vernal pools, allow these insect larvae to obtain oxygen in vernal pools that often have quite low oxygen

content. Some species, particularly those found in streams, also have dense tufts of gills at the base of the lateral gills for pulling oxygen out of flowing water.

Fishfly larvae tend to be found in vernal pools that hold water for most of the summer and that have deep mucky soils. Occasionally, the larvae can be found by looking under logs and stones in the deeper portions of a dry vernal pool, where they may be waiting for the return of water. By burying into the wet mud under cover of a rotting log, they may be able to survive a short dry period.

# MAYFLY

C: *INSECTA* O: *EPHEMEROPTERA*

## LARVAE

Mayflies are a diverse group of insects, all of which have aquatic larvae. Though most commonly found in rivers, mayfly larvae can often be found in vernal pools. They are small (.25-.75"), delicate larvae that have a set of 3 (rarely 2) "caudal filaments" that look like flexible spines at the end of their abdomen. Thin, fanlike gills are paired along the abdomen on each segment, giving the larvae a somewhat ragged appearance. Mayfly larvae are detritivores, feeding on a wide variety of plant and decaying animal matter.



Mayflies have very slender legs, paired lateral gills and typically 3 filaments on the tip of the abdomen.

Mayflies go through a synchronous emergence where many nymphs hatch at the same time, in some cases flooding the night with newly-emerged adults. The adults emerge with only one task, to mate and produce the eggs that will hatch the following year. They emerge with no mouth parts, and only live for a couple of days after metamorphosis. Their ephemeral adult stage gives rise to their scientific name.

# CHIRONOMID MIDGE

O: *DIPTERA* F: *CHIRONOMIDAE*

## LARVAE

The chironomid midges constitute the largest family of aquatic insects. Their larvae (.1-.8") are very commonly found in vernal pools and are an important food source for numerous vertebrate and invertebrate predators. The larvae are basically worm-shaped, slender and cylindrical, though they have pairs of fleshy prolegs at both ends of their bodies. Many chironomid midge larvae are blood red due to a hemoglobin-like pigment that helps them retain oxygen. This pigment allows the larvae to survive in water that is very low in dissolved oxygen, as is common in vernal pools as drying proceeds through the seasons.



Chironomid midge larvae are blood-red, wormlike larvae that wriggle through the water column.

Chironomid larvae tend to be predatory, but may also graze on fine detritus particles on the substrate. They can be found in the pool bottom debris or wriggling wildly in open water as they use body contortions for movement.