CHIRONOMIDS (Midges)

CHIRONOMID PUPA

CHIRONOMID PUPA (DURING ASCENT, TRAPPED AIR IN BODY GIVES THE PUPA A SILVERY APPEARANCE)

Chironomids are members of the order *Diptera* (true flies) and are close relatives to mosquitos. They complete a full life cycle (metamorphasis), and can be seen in and around stillwaters in larval, pupa and adult forms. Accounting for more than 40% of trout's diet, they are without question the most important stillwater trout food source.

Species:

There are over 2500 different species of chironomids in North America. These appear in an array of sizes and colours.

Description:

Chironomid Larvae (Bloodworms):

The larvae of the chironomis often (called bloodworms) are thin, segmented worms ranging in length from about 9 - 25 milimeters. They are often bright red in colour due to their rare ability to use hemogloben (the same red pigment in our blood) to consume oxygen. Other larval colours include maroon, green, and mixes of green red and pink. The butt end (opposite the head) is often black. The larvae are poor swimmers and move around by thrashing about.

BLOODWORM

Chironomid Pupae:

Chironomid pupae have slender, segmented, tapered bodies (narrower near the butt and wider near the thorax). The body leads to a slightly wider thorax (that is often dark in colour). On top of the thorax are distinctive "cottony" white gills. Pupae can range in size from less than 5 milimeters to upwards of 25 milimeters. Pupae come in a range of colours with black, brown, olive, grey maroon and green being the most common. Often some left over red hemoglobin (from the larval stage) will accumulate distinctively in the butt area. During this stage, chironomids trap air bubbles under their skin. This provides bouyancy and aids their ultra-slow ascent to the surface. These trapped gases also result in the pupa taking on a silvery shine.

Adult Chironomids:

Adult chironomids look very similar to mosquitos (although these species do not bite). The bodies of adults are often similar in colour to what they were during the pupal stage. Adults have grey / tan wings and long, thin legs. Adults are often smaller than they were during their pupal stage.

ADULT CHIRONOMID

Preferred Habitat:

Chironomid Larvae (Bloodworms):

Most bloodworms are very reclusive and like to "hide" in tubes that they build in the bottom of the lake substrate (where the water and muddy bottom meet). Others are more brave and move freely about the lake bottom.

Chironomid Pupae:

Chironomid pupae can be found at any height in the water column. The main "goal" of the pupal stage is to allow the chironomid to reach the surface where it will shed its outer shuck, dry its new wings, and fly away as an adult.

Adult Chironomids:

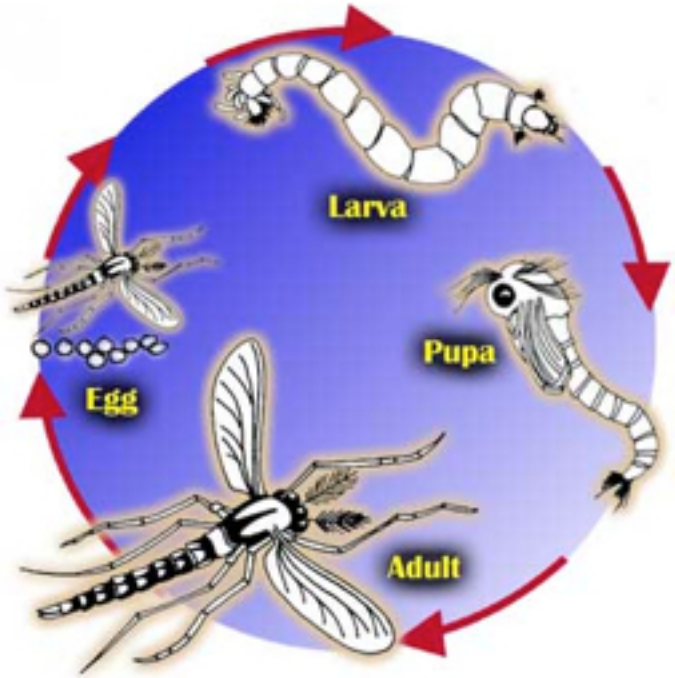
Adults will often swarm on or near the lakeshore, where they quickly pair up and mate. A female will often return to the lake during the calm of the morning, land on the water, and deposit her eggs to replenish the cycle. Adults die very soon after mating.

Seasonal Availability:

	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
LARVAE	✓	✓	✓	✓	✓	✓	✓
PUPA / ADULTS	✓	✓	✓		✓	✓	✓

CHIRONOMID PUPAE ARE LIKELY THE MOST IMPORTANT STILLWATER TROUT FOOD SOURCE

Life Cycle:



As mentioned earlier, chironomids proceed through a complete life cycle (or metamorphosis). The female lays eggs on the top of the water, and they sink to the bottom. An egg hatches into a larvae that continues to grow for up to two years before transforming into a pupa. After a couple of days, the pupa begins a painstakingly slow ascent up to the surface of the lake. Here the pupa sheds its outer shuck, dries its wings and becomes a flying adult. The change from pupa to adult (called emergence) can take very little time if a breeze ripples the surface, or a very long time when the water surface is very calm.

Chironomids and the Food Chain:

Chironomid larvae feed on microscopic aquatic plants as well as decayed plant material that has fallen to the lake floor. Pupae primarily focus on their ascent to the surface, and adults focus mainly on mating. Subsequently, virtually nothing is eaten by the chironomids during the latter two stages. As mentioned previously, chironomids are an incredibly important food source for stillwater trout, and due to their slow movements and vast numbers, provide the greatest number of calories for the average trout in the BC Interior.

LOGAN LAKE SECONDARY