Small Fly, Big Bite

Until you have experienced a massive swarm of black flies, you will never fully appreciate the saying, “You can run, but you can’t hide.” Buffalo gnats, white flies, woodland midges, black flies—whatever you call these tiny bloodsuckers, there are few insects that can induce panic like a swarm of black flies. I first encountered this ravenous pest 30 years ago on a trip to New England. A late-May heat wave had followed me east from Chicago, and by late morning it was already over 90 degrees when I pulled into a campground alongside a small stream that supposedly had a decent population of brown trout.

As I drove in with windows up and air conditioner blaring, I noticed the few campers there all wore long-sleeved shirts, long pants, and hats with head nets. A bit overdressed, I thought, getting out of the car in my T-shirt and shorts. I strung up my rod, tied on a nymph nymph, and waded in. The cool water felt great on my bare legs. Fifteen minutes passed with only the excitement that a five-inch brown could offer. Then I noticed a few small flies on my arm. Then a few more, when suddenly a cloud of tiny flies descended on every nook and cranny of exposed skin, even crawling up my nose and into my ears. They wanted one thing: my blood.

I reached the car in full stride as small streaks of blood trickled down my face. I was miles away from that little bit of hell pretending to be a trout stream before the last black fly got his fill.

Bloodthirsty black flies can ruin your day on a trout stream, but they might also save it.

Black Plague

In temperate North America, black flies generally cause no more than painful bites and occasional allergic reactions. In fact, many western species feed only on viruses in birds and other animals. As small as they are, black flies carry a big bite.

All 1,500 or so species of black flies belong to the family Simuliidae in the order Diptera, or true flies. Twelve genera have been described in this family, but most of the approximately 200 North American species fall into one of two similar-looking genera, Simulium or Prosimulium. Like other Diptera, black flies have a complete metamorphosis, or four stages of development: egg, larva, pupa, and adult. But the appearance of each stage is quite distinct from other Diptera.

The larvae are slender cylinders with a swollen bottom end, narrow waist, and slightly swollen thorax, giving them a bowling pin shape. They have no functional legs and only a short, stub-like appendage under the head called a proleg. Fully mature larvae range from about 1/8 to 3/8 inch long and vary in color from pale gray to pale, yellowish brown to almost black. They inhabit all types of streams, from small trickles to major rivers. But they live only in areas with moderate to fast-moving water, where they colonize rocky substrate, submerged logs, or the stems and leaves of underwater plants.

Pupae develop inside small, wedge-shaped cocoons in the same habitat as the larvae. The pupal cocoons are tan to light brown and range from 1/8 to 3/4 inch long. At emergence, adults leave the underwater cocoon and rise to the surface in a bubble of air. When these silver capsules reach the surface, the adults immediately
break through the film and fly to nearby vegetation to rest while their exoskeletons harden.

Black fly adults are small, harmless-looking flies about 1/8 inch long with a stout, hump-backed shape. Most adults are dark brown or black, but some species are reddish brown, gray, orange, or yellow. A look at the head suggests nothing to explain the painful bites they inflict.

Know Thy Smut

White trout feed primarily on the larval stage of black flies, they will also prey on adults. Mature black flies are most vulnerable when they are rising to the water's surface during emergence. This behavior is not easy to detect, but if you pick up rocks from the stream bottom and find dozens of pupal cocoons lined up in neat rows, you can assume that adults will be emerging at some point during the day, ascending to the surface in their silvery capsules of air, often producing the so-called smutting rise. According to Darrell Martin's book, The Fly Fisher's Illustrated Dictionary, smut, in this case, comes from an Old English word meaning "smudge" or "soot"—or a small black particle—and from an early Irish word meaning "cloud." Hence, a cloud of small, black particles describes a hatch of black flies quite well. A smutting rise refers to fish feeding on emerging black fly adults just below the surface.

Most descriptions of fishing a smutting rise, or reed smuts, are in writings about English chalk streams. But this phenomenon is not limited to those waters. Black flies are equally abundant, if not more so, in North American trout streams. However, the smooth currents and visible trout of the chalk streams, combined with a long history of deciphering their hatches, probably gave English anglers an edge in developing patterns and techniques for solving this perplexing problem. Also, because the diversity of aquatic insects is much greater in North American trout streams than in English chalk streams, it is harder to know when trout are feeding selectively on black flies.

Their importance, however, was clear in a university study that ranked the prevalence of 90 different aquatic insects in the diet of rainbow trout from a Rocky Mountain stream. Black flies ranked second, surpassed only by blue-winged olive mayfly nymphs.

R. H.

Close examination with a microscope, however, reveals mandibles with serrations and teeth for slicing into skin. It is a marvel that something so small can be so effective.

Eat and Be Eaten

Adult black flies bite to obtain a high-protein meal of blood for egg development. This explains why only females suck blood. Males—and the females of less malevolent species—feed primarily on nectar from various plants. After mating, females lay their eggs by one of several methods. Some release eggs by touching their abdomen to the water's surface while flying. Others deposit eggs on grass or plant stems trailing in the water close to the surface, and some crawl underwater to deposit their eggs. Most females lay 200 to 500 eggs and live two to three weeks.

Avoidance may be the only goal most anglers have in mind when they think of black flies. But there is another side to
these devilish creatures. Except for the brief periods when adults are present, black flies are the eaten rather than the eaters. The abundant larvae routinely drift in the current, where they are picked off by trout and other fish. In fact, in streams with dense black fly populations, black fly larvae can be among the more common food items for trout. Besides drifting freely in the current, larvae also rappel downstream on a single silk thread attached to an upstream rock or plant. As they slowly lower themselves, they dangle helplessly in the current.

When you need to imitate black flies, it will most often be the larvae, as this is the longest-lived and most available stage. But you still have to determine when trout are selectively taking them. One quick method is to pick up stones in moderate to fast riffles to see if larvae are present. If you find rocks covered by masses of larvae, and trout seem impossible to catch, you might want to drift a small larva pattern through riffles and areas just downstream, where trout can hold and feed. Such patterns often consist of nothing more than the right color of thread wound on a size 16 to 22 hook. Some midge-larva patterns can also be used to imitate black fly larvae. Dead drift these flies close to the stream bottom. The best method will depend on the speed and depth of the water, but you will usually need extra weight on your leader to help sink the small patterns. A strike indicator can help you detect subtle takes.

If black fly adults are on or near the water, and the trout are leaving little dimples on the surface while all your dry-fly offerings go ignored, you are facing a “smutting” rise, an Old English term for a black fly hatch. (See “Know Thy Smut” page on 22.) This is the time to try an emerging black fly adult pattern. T
most obvious characteristic of emerging adults is the sparkle caused by the bubble of air surrounding them. Therefore, emerging patterns need to imitate this trait. Silver tinsel or Mylar and small glass beads produce a realistic look.

The Bubble Smut pattern shown on page 23 is from Darrell Martin’s Micropatterns.

Fish the adultemerger flies below the surface with a dead-drift presentation. Typical dry-fly methods will usually work, but because the pattern is below the surface, strikes are visible only as a slight movement of your leader or the flash of a fish just below the water. Set the hook with a gentle lift of the rod tip, and be ready to give some line when a trout on the other end feels the hook. This is challenging fishing, but quite exciting and rewarding when it all comes together.

Without a doubt, black flies can be a curse. But they can also save the day when trout seem impossible to catch. Not everything about these small bloodsuckers is black.

Rick Hafele grew up in Illinois and moved west to fish and study the insect life of Western streams—not just to avoid black flies.


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