



# Fish Eyes and the Paradoxes of Survival

by Art Michaels

**Just before I released a big walleye I had caught, I studied its eyes close-up and pondered their importance. I realized that when a gamefish like a walleye attacks a baitfish, the predator, viewing the baitfish's eyes, instantly discerns the target's size and shape. By looking at the eyes, a predator also estimates the baitfish's speed and direction in which it's swimming. After mysteriously and instinctively weighing these observations, the predator can attack with deadly precision. In addition, injuring a baitfish's eyes makes the outcome of a predator's second attack a certainty.**

While looking into the walleye's eyes, I also understood its paradoxes of survival—ironies that apply to all fish: First, through the eons of time, the importance of a fish's eyes to its survival made the eyes the hardest part to disguise. Thus, a fish's eyes are generally its most vital and yet most vulnerable sensory organs. Second, a fish's eyes make it both predator and prey at the same time.

A fish's eyes, like ours, collect and reflect light, and in the prey's case, that can be a beacon to predators. Lures and flies often include brightly reflective materials, but in the water's dimness, a lurking predator's attack can be guided by the only reflection it might see: The light reflected in the target's eyes.

Swallowing prey head-first is easier than engulfing prey differently, so a predator ultimately tries to attack the prey's head for quick consumption. But nature knows how vital the eyes are both to attacking and to surviving an attack. The large dark spot at the base of the saltwater redfish's tail, a similar dark spot on Pennsylvania's endangered bowfin, and the dark spots on the tails of some reef fish could be "false eyes," nature's way of fooling an attacker into striking the wrong place. Or during the split second of a predator's indecision about which spot is the eye, the prey could get away.

photos-Art Michaels

A pumpkinseed and other sunfish's gill flaps, a brown trout's dark spots, a brook trout's light spots, and even the dark shoulder spots of several shad species are similar feints. The yellow dots of the spotted salamander, the red-spotted newt's spots, the markings of some frogs and toads, and the wing markings of some butterflies and other insects could also be viewed as such gambits.

For these reasons, flies and lures with big, vivid eyes can be especially attractive to gamefish. Lures with eyes are better fish-catchers than are offerings that imitate a baitfish's shape and color but don't include its eyes. A predator might even identify some fish-imitating lures and certain flies without eyes as fakes.

Some early flies designed to catch Atlantic salmon were originally tied with jungle cock eyes—small, bright feather tips, called “nails,” with dark spots on them that simulate eyes. When importing jungle cock eyes from endangered birds became illegal, plastic imitations appeared on the market. Today, fly tiers still use jungle cock eyes bred from domestic (legal) birds and other jungle cock eye imitations.

Fly-tiers and lure-makers today have many more options for adding eyes to their creations. In fact, fly-tying and lure-making supply retailers often list eye materials separately in their catalogs because there are so many choices.

There are lead or brass hourglass or barbell-style eyes in various sizes. These eyes straddle the hook shank and are tied in place. Aluminum eyes are similar and can be used when you don't want to add too much weight to your fly. Bead-chain eyes can be applied to flies in the same way you'd apply hourglass eyes. You can also place strung plastic beads for crafts on flies, nymphs and crustacean patterns.

Stick-on eyes and molded “3-D” eyes in bright colors with black pupils can also be applied to streamers and bugs. Bend flat adhesive eyes to shape and then glue them in place. These eyes also work well on crankbaits. There are nickel and brass beads molded especially to fill a lure's eye sockets.

“Doll eyes” feature a molded black eye that moves against a white background. Doll eyes can help a lure float because the pupils move in air-tight plastic chambers. The movement makes noise, which might also attract fish. You can also secure monofilament line of about 30-pound test or heavier to a fly and evenly singe the tips to form eyeballs. Use a permanent felt-tipped marker to color the mono before singeing. Melted mono eyes are also available commercially.

Painting eyes on lures can also produce some alluring effects. Use the heads of different sized finishing nails to create eyes—larger heads first for the

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irises and smaller heads for pupils, both with contrasting paint colors. It takes practice to make perfectly crisp, round irises and pupils, and be sure to let the irises' first coat of paint dry completely before adding the pupils.

Next time you catch a fish, look into its eyes and acknowledge the fish's perseverance, determination and desperation. You might also see, as I saw in the walleye's eyes, the fish's paradoxes of survival: It's most vital sensory organs are its most vulnerable, and the eyes make it both predator and prey at the same time.

As fly-tiers and lure-makers, capturing these qualities by placing distinctive eyes onto our creations would surely elicit more strikes. ☐

