

## WHAT ARE THOSE BLACK SPOTS ON THE FISH IN MY LAKE?

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**H**ave you ever caught a fish and noticed small black spots on it, sometimes resembling sprinkled black pepper? What you're seeing is the result of the larval stage of a parasitic trematode (i.e., worm) infecting the fish. The eggs of the parasite get into the water through the feces of a fish-eating bird, often a kingfisher or great blue heron. The eggs then hatch, releasing the free-swimming larvae, called miracidia, which find and infect their first intermediate host, a snail. The parasite develops further inside the snail until it reaches its next stage, called a cercaria. It then leaves the snail and swims freely in the open water until it can attach to and enter the skin of a fish, where it typically encysts. The second intermediate host for the parasite is fish. Most fish species, including bluegill, largemouth bass, other sunfish, perch, pike, and walleye, can serve as hosts. The disease is called black spot, sometimes referred to as black grub disease. Black spot is caused by multiple types of trematodes.

After the parasite encysts in the fish, black spots appear on the fish's skin and sometimes just beneath the skin. The black spots you see are due to a black pigment (called melanin) that the fish produces in response to the infection and forms around the encysted parasite. The life cycle of the larva is completed when a fish-eating bird consumes the infected fish, after which the parasite fully matures into an adult trematode in the digestive tract of the bird. If a different animal eats the fish, the larvae do not survive.

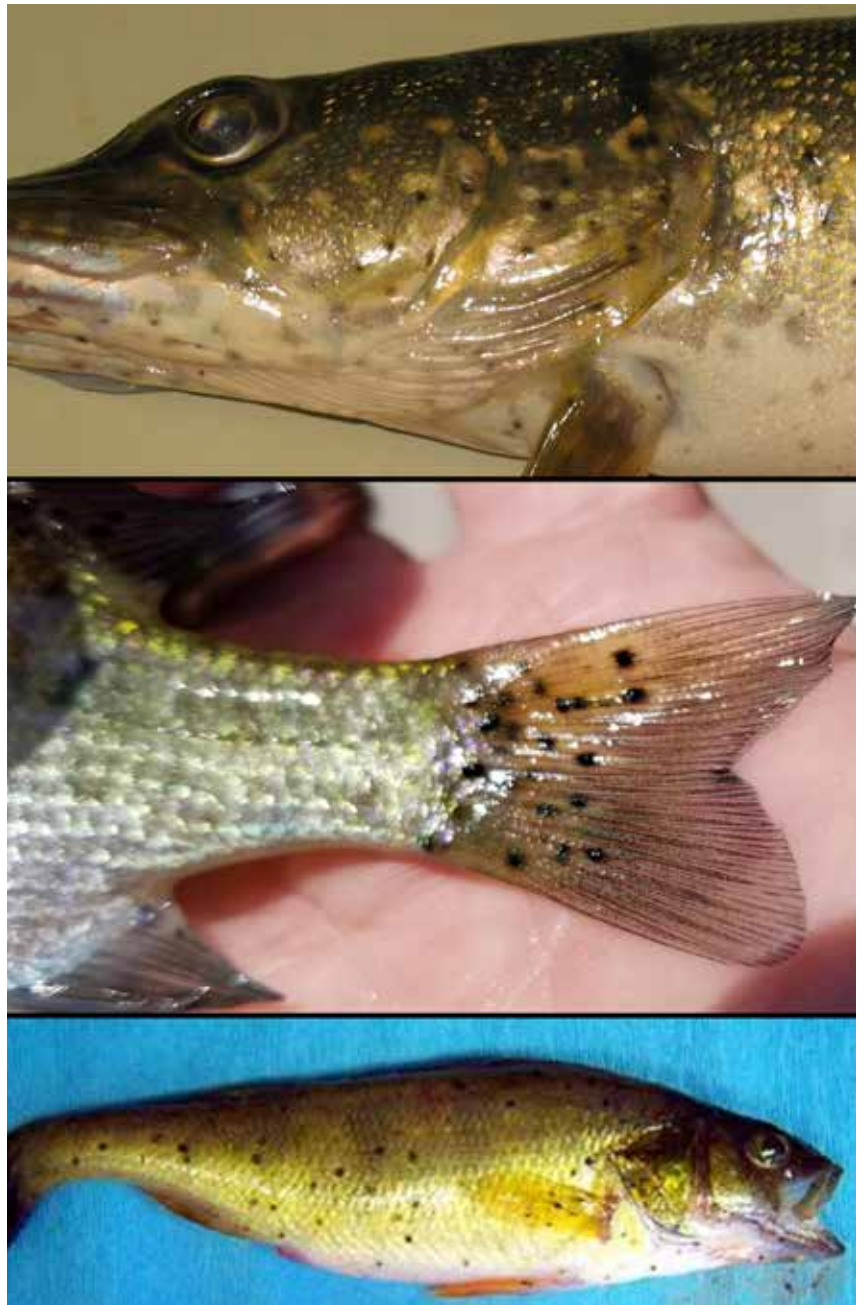


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One of the main issues associated with black spot is its unsightly appearance. While a blackspotted fish looks unappealing to eat, it can be safely consumed if the fish is completely cooked, which kills the encysted parasite. The flavor of the fish is not altered. Anglers who catch fish with black spot disease should find that most cysts can be removed by filleting the fish. Those that remain can usually be trimmed out since the parasite does not penetrate all the way to the muscle and typically stays in layers of the skin.

Anglers that catch fish with black spot disease may also choose to release them back into the water. In most cases, this parasite does not impact the growth or survival of fish since the parasite does not interfere with adult fish growth or lifespan. However, some studies have shown that infested juvenile fish can be negatively affected, resulting in blood loss, stress, and sometimes death. As the parasite is common in many Michigan lakes, black spot is a common condition in many Michigan fish.

Generally, if control methods are sought, they focus on removing the intermediate host, in this case, snails. Removal of snails leaves the parasite unable to complete its life cycle, thus leaving fish uninfected. However, treatments to kill snails may also be harmful to other invertebrates and to algae.

Questions about fisheries management, including disease prevention and control, should be directed to the local fisheries biologists with the Michigan Department of Natural Resources. Learn more at [www.michigan.gov/fishing](http://www.michigan.gov/fishing).

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