

The mysterious BLUE WALLEYE of Canada

By Lee Kernen
Contributing Writer

Seventy-five years ago, Lake Erie was home to a species of fish known as the blue pike, which was actually a subspecies of walleye. They were slightly smaller in size than the walleye, and had larger eyes, perhaps to help them thrive in the deeper water they preferred. Their color was a grayish-blue, with none of the brassy yellow markings of the walleyes we know. Like walleyes, they were delicious table fare. The blue pike disappeared from Lake Erie in the 1950s, probably through the combination of pollution and overfishing.

Over the years, there have been sightings of blue-colored walleyes in several areas of Canada, but no one had ever collected these fish to see if they were related to the extinct species from Lake Erie. If they were, it might be possible to re-establish this

unique critter to the Great Lake.

At a recent meeting of fisheries biologists who belong to the American Fisheries Society, held in Dubuque, Iowa, I was surprised to listen to a presentation about the discovery of blue walleyes in Ontario. The researcher doing this work, Dr. Wayne Schaefer, is a professor of biology at the University of Wisconsin.

During the past few summers, Schaefer and his students have traveled to Canada, following up on reports of blue walleyes in an attempt to collect some and study them to determine the genetic integrity of the fish, the cause and evolutionary significance of the blue color, and the distribution of the blue-colored fish. Schaefer's investigations centered in the area east of Ear Falls in Ontario. Most of the reports of blue walleyes were associated with the upper end of large river systems. Blue-colored walleyes

were collected from several locations by hook and line.

With the genetic testing capabilities that scientists have today, it didn't take Schaefer long to compare the DNA in the blue Ontario walleyes to archived samples of Lake Erie blue pike that had been preserved in the laboratory before they disappeared. They didn't match.

The DNA analysis showed the blue walleyes from Ontario were genetically similar to the normal-colored walleyes, and not the extinct blue pike. But many questions remain as to why the different color. Schaefer took a knife and lightly scraped the side of the one of the blue fish and he could see clearly that the blue pigment was actually in the mucous of the fish. Moreover, he and his students sampled normal walleyes that had small areas of blue pigment in their mucous, too. Could it be spreading?



Dr. Wayne Schaefer has followed up on reports of strange-colored "blue walleyes" in northwestern Ontario. More information is available online at www.bluewalleye.com.

Photos by Dr. Wayne Schaefer


Next he analyzed the chemical make-up of the blue pigment itself and found that it is a protein, and the closest match he could find was an amino acid in a relatively obscure marine fish, the spotted puffer.

The next objective will be to determine whether the blue protein is being produced by the fish themselves, or

whether it is caused by an external environmental influence.

You can go to www.bluewalleye.com to learn how to collect a fish mucous sample and send it to Dr. Schaefer to participate in the study, should you chance upon such an unusually colored fish.

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