

A CASE STUDY: BIG SPRING CREEK, PA

By Joe Hemming, First Vice President

Anglers of the Au Sable has been hard at work opposing the fish farm permit as presently issued to Harrietta Hills Trout Farm. The permit would allow Harrietta Hills owner/operator Dan Vogler to raise up to 300,000 pounds of fish at the old Grayling Fish Hatchery.

We thought it might be helpful for our membership to see exactly what damage can be wrought on a pristine blue ribbon trout river — such as the Au Sable — if this project is not done carefully, and with all the proper safeguards. With that, let me introduce you to Big Spring Creek in the state of Pennsylvania.

E.P. Macri Jr. in 2009 wrote, “The story of Big Spring Creek is one of legend. In the 1920’s through (the) 50’s the stream was so famous that the English sporting media regularly sent reporters over to do stories on this American spring creek, which was comparable to the best English Chalkstreams. Its native strain of brook trout were like no other that anyone could find.” As written by Jim Chestney in an article entitled *The Saga of Big Spring Creek*, some of the earliest conservation measures that were adopted in the United States in fact may have originated on this stream back in 1850 when a creel limit was established of 50 trout per day with the river enjoying a glorious background in the annals of American trout fishing. Dr. John Black, in a column written in the forum section for *Fly Fisherman* magazine, mentions such angling legends as Charlie Fox and Ernest Schwiebert fishing at Big Spring. Dr. Black describes that for a stretch of Big Springs before 1955 – regardless of day or season of the year -- hundreds of rising trout could be seen. You get the drift: this was one fabulous trout fishing river. And then come the hatcheries.

Black, in the February 1999 issue of *Fly Fisherman* magazine, in an article entitled, “What Happened to Big

Springs?” said that over the previous forty years, the Big Springs trout fishery has been affected by two trout hatcheries, the first being a commercial hatchery developed in the mid-1950s about a half mile below the source of Big Spring. Several years after this hatchery reached a substantial level of production, the brook trout fishing declined below the hatchery. This commercial hatchery closed in 1968. Then, in 1971, the Pennsylvania Fish and Boat Commission constructed a massive fish hatchery known as the Big Spring Fish Cultural Station. This station was at the spring’s source. The remaining wild population of brook trout collapsed within a few years after that hatchery became operational in 1972. Black ironically describes the Fish and Boat Commission’s original 1972 news release stating that the hatchery was built above the spring “in order to retain Big Springs as top notch trout stream.” So how did these hatcheries affect Big Spring Creek?

Black and Macri wrote an article in 1997 entitled “An Ecological Survey of Big Spring Creek with Emphasis on the Effects of Fish Hatchery Effluent” describing Big Springs as one of America’s greatest trout streams until the mid-1950’s, which is when the first hatchery was built. Their report analyzed the history and circumstances surrounding the collapse of the fishery at Big Springs Creek. Historically, as the authors describe it, Big Springs Creek was among the most productive wild brook trout stream fisheries in the eastern half of the United States. Their report was aided by the fact that the river, as a high-quality limestone spring creek, has a documented history exceeding 125 years. This fact obviously was of great assistance to Black and Macri in their research.

Through their report, the blame for the collapse of the fishery is laid squarely at the feet of the Pennsylvania Fish and

Boat Commission, the very agency that was supposed to protect and manage Pennsylvania’s fisheries. As with any flow-through hatchery, there was effluent. The effluent affected, according to this report, the sensitive insect species such as the sulphur mayflies that were once prolific and now absent, very much limiting the biological diversity (something for which the Au Sable River is famous) to pollution-tolerant organisms such as cress-bugs and midge larva. Another key finding in this study was that with these hatcheries being present, low dissolved - oxygen concentration occurred within the stream’s gravel bottom and spawning areas that were formerly used by the wild brook trout. The levels found were insufficient to support natural reproduction. Black and Macri’s report points out that after a commercial hatchery began operations about 0.6 miles below the source, at the point where this hatchery reached a substantial production of approximately 300,000 fish, the wild brook population failed downstream of this hatchery. There remained a wild population upstream from this hatchery, which continued to be the case through 1971. Unfortunately, as referenced above, the Pennsylvania Fish Commission established the Big Spring Fish Cultural Station at the stream’s spring source in 1972 with an initial crop production in 1973. Thereafter the remaining wild population failed. The collapse of the remaining wild brook trout fishery was complete around 1975, with a small trout population remaining that was less than ten percent of the historic population numbers. The authors felt that the small population was easily accounted for by stocked trout and hatchery escapism. Black and Macri believed that the original strain of wild brook trout that made Big Spring famous no longer existed.

According to Black in *Fly Fisherman*, when confronted with these findings, the Fish and Boat Commission ac-

knowledge deficiencies in the hatchery effluent but were quick to point out that their effluent met all the current state and federal standards. Apparently, those standards were insufficient, and Black pointed out that this was a poor trade-off given that America lost one of its greatest trout streams.

As with any flow-through hatchery (a flow-through hatchery is one in which the river both enters and exits the hatchery), there are organic wastes and nutrients discharged in the hatchery effluent, which results in nitrogen enrichment and oxygen depletion, thus altering the waters below the hatchery. Mayflies and stoneflies — the proverbial canaries in the coal mine — cannot thrive in these types of waters. Even with the technology utilized at this state-run station at Big Springs, which in this case involved a conical clarifier helping to remove the waste, it did not afford adequate protection for the water quality needed for wild brook trout reproduction in a limestone stream. Production figures for the Big Spring Fish Cultural Station, run by the State of Pennsylvania for 1994/1995 indicate a production of 365,207 pounds. Black and Macri indicate that this translates to approximately 900,000 trout per year. Bear in mind that the permit issued to Harrietta Hills at the Grayling Fish Hatchery allows for 300,000 pounds of fish.

Fly Fisherman magazine describes Big Spring as once the premiere wild brook trout fishery in Pennsylvania, if not the nation. It reports that the state fish hatchery built in 1971 at the headwaters was using the flow of the creek to feed the concrete raceways (similar to the setup at the Grayling Fish Hatchery) with cool oxygenated water as well as providing a convenient mechanism to dispose of warmer dirty waste water filled with fish excrement. Sound familiar? *Fly Fisherman* does report that by 2001, the Pennsylvania Fish and Boat Commission shut down the hatchery and a few years later, the native brook trout and rainbow trout made a dramatic come-back with the closing of the hatchery.

Reading of Big Springs and the collapse of its fabled wild brook trout

fishery with the presence of these two hatcheries should cause great concern to anyone worried about the welfare of the Au Sable. This is particularly so when, in the March 12, 2015 edition of *Great Lakes Echo*, Dan Vogler is quoted as saying, "Does it make sense that they would regulate a small fish farm the same way they would regulate [larger polluters]? At the end of the day, what is the worst thing I am going to discharge? It is a substance called fish poop." Seeing what happened with this "substance called fish poop" in Big Springs leads one to believe that not only should Dan Vogler's operation be regulated, but it should be regulated strictly. As we at Anglers of the Au Sable have said, the Grayling Fish Hatchery is shifting from a hatchery to a fish farm and in fact will be an industrial fish farm. To increase fish production from under 20,000 pounds of fish per year to 300,000 pounds of fish is an increase of epic proportion and cause for huge concern on the part of anyone who enjoys the beautiful, clean water of the Au Sable River.

As Anglers have indicated in its objections to the permit as issued by the DEQ for the Grayling fish farm, the permit is inadequate for what Vogler plans to produce. And as we have seen in Big Springs, just because the state has put its stamp of approval on this operation by way of issuance of a permit, this does not mean that it is safe.

Vogler will be emitting from this fish farm all of the same substances that were released from the hatchery at Big Springs, that being excess phosphorus, suspended solids and other effluents, thereby reducing dissolved oxygen and thus affecting the growth of algae and adversely affecting the insects and health of the fish. And in this article we haven't even begun to talk about fish escapement, the fear of whirling disease, the lack of monitoring, nor the lack of holding Vogler to financial responsibility for his operation. Like the remodeling of an old house, the deeper we dig, the more problems we find.

Recently I had the pleasure of talking to John Randolph who was the editor and publisher of *Fly Fisherman* magazine from 1979 to 2003 and is very familiar

with the Big Spring saga. In describing Anglers' efforts at protecting the Au Sable from the fish farm operation at the Grayling Fish Hatchery, Randolph said, "Big Spring is an example of why the trout streams of the United States are so indebted to the fly fishers of our country for their survival and renewal. Fly fishers comprise the only native American trout-conservation movement. Without the persistent advocacy of fly fishers in the Cumberland valley region, Big Spring revival would not have occurred. In my experience their achievements are mirrored across the U.S. through the efforts of fly-fishing conservation groups from the Au Sable in Michigan, to the upper Delaware in New York, the Deerfield in Massachusetts, the Sacramento in California and the trout rivers of Montana, Idaho, Colorado, and the list goes on."

Randolph does report that with the closing of the state-run hatchery at Big Spring that "Big Spring is well on its way to recovering its former glory as an increasingly productive wild brook trout fishery."

In dealing with our own Big Spring situation, Anglers is ever present in its efforts at protecting the Au Sable from the potential impact of the Grayling fish farm. Another meeting was recently held in Lansing with the Anglers and the DEQ. Also present at this meeting was the other organization objecting to the issuance of this permit, Sierra Club. This was another meeting in a series of meetings with the DEQ in addressing the shortcomings of the permit as issued. At the end of the meeting, it was apparent that the DEQ was not going to be able to fully address all of the concerns over the permit and that a hearing would be necessary.

This now means that Anglers' objections together with the objections of Sierra Club will be heard by an Administrative Law Judge at a hearing to be scheduled. Stay tuned. Rest assured that Anglers will be ever vigilant over what is one of our most serious threats to the Au Sable in recent memory. "Preserve and Protect" are the words in our mission statement, and that is exactly what we intend to do.