

WILD TROUT MANAGEMENT: CAN WE DO IT BETTER?

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TROUT UNLIMITED

After discovering the May 1973 Pennsylvania Council's 'Trout Policy for Pennsylvania', I wrote my supervisor a memo in support of this policy. In this March 1975 memo, I suggested that we identify some of our best trout streams, stop stocking them and evaluate the results. I was in my third year with the PA Fish Commission, and my boss, Ed Miller, was later to become its Executive Director. My job description included the role of agency planner, which I always took seriously in spite of limited results. Ed was already aware of TU's goals, and this gave us an opportunity to discuss the subject with his fisheries director. ^{(De(Groff))} The ultimate result was far more than I had hoped for--development of a complete fisheries management plan--the organization's first venture into these murky waters.

A year later, after much necessary preliminary work, the Fisheries Division began to inventory over 5000 miles of trout streams in 1976. This herculean undertaking, called Operation FUTURE, by 1982 had identified 167 stream sections--including 24 sections already under special regulations--as Class A Wild Trout streams. They met the minimum standard of 36 pounds per acre of brown trout and mixed trout populations, 27 pounds for brook trout streams, and just proof of reproduction for rainbow waters.

Regulations for these waters, unless under special regulations, would be unchanged: eight trout of at least seven inches

length. It was decided, after considering various proposals including my own, that, quote: "Elimination of the effects of stocking and excessive harvest" could be all that was necessary to protect these-our finest, and often most fragile resources. The regulatory decision overruled the argument that protective regulations were essential, but not before former commissioner Bob Martin promised that if subsequent evaluation proved that wild trout populations were not adequately protected, more conservative regulations would be implemented. In the bureau director's presentation of Pennsylvania's program at Wild Trout III (Yellowstone 1984) he reiterated "If trout populations were not as good as originally thought, then management changes would be made." But were they?

I'm not certain what "as good as originally thought" means, except possibly that no measurable objectives were in effect at that time.

At the same time fisheries staff was dealing with wild trout, stocking formulas were being altered to reflect a combination of resource and social factors.

Press releases in 1989 and 1993 inferred that Class A waters were faring well under statewide regulations. After the first release, I was unable to obtain a copy of a study or results, as they were "not available." However, in 1993, a new cold-water leader took over, so I again requested the data, and

although apparently not yet in workable form, they were provided within two months. The new unit leader revealed that he could not find a copy of the original 1987 Class A specie biomass listing. Without this, it would have been virtually impossible to chronicle population changes. Fortunately, I had retained my copy of the original list, which consisted of 167 stream sections, and was able to perform the evaluation. (I GAVE THE LEADER A COPY OF THE ORIGINAL LIST)

Of the original 167 sections, 30 were no longer carried as Class A. Many of these were dropped because ^{they reflected} of habitat or water quality problems or ^{accidental} ~~misleading~~ hatchery trout ^{releases} ~~presence~~. A review of those stream files convinced me that at least 13 of the 30 sections reflected overharvest. The 24 sections under special regulations had to be appraised separately, leaving 126 of the original sections for evaluating biomass alteration.

Of the 126 comparable sections, 58 had recorded greater than 10% biomass alteration. Twenty of these had increased biomass, but 38 were degraded. These numbers do not support the glowing claims of the press releases. On the other hand, of the 24 sections under special regulations, eight significantly upgraded and just 2 downgraded. And those two continued to support populations among the state's highest.

In 1995, the following statement appeared in the PFBC annual report: "Completion of report reflects positive response to stream sections managed in the wild trout program with no

stocking." The report is troubling for several reasons. Primarily, the authors were uncertain about the objectives for this wild trout management. It was stated that a common objective was, "maintaining standing stocks at or above...the qualifying survey." They then ignored this modest objective, and considered any section ^{that} ~~which~~ remained Class A, regardless of the degree of degradation, as representing a 'positive response'. A second objective was dismissed by stating that natural variation might limit its attainment, and, (based on the report,) was not evaluated, or if it was, the objective apparently was not attained.

For unknown reasons, only 71 of the 167 qualifying sections were evaluated, including 18 under special regulations, compared to the original 126, plus 24 under special management. We don't know how many of the other sections were downgraded.

In this PFBC study of the remaining original Class A sections under statewide regulations, 16 showed improvement while populations of 36 have regressed. All 7 brook trout streams experienced biomass deterioration. Although two of three rainbow streams had slightly increased populations, all were so low (3.79 to 15.8G Kilos/hectare) that they may soon be lost unless better protected.

Incredibly, in spite of this critical loss of biomass in streams that the Commission is committed to protect, conserve and

enhance, they concluded after this review that the results "reflect positive response" to stream sections that are clearly deteriorating under statewide regulations.

On the other hand, 14 of 18 stream sections under special regulations have continued to improve. These result in over a two to one downgrade in wild trout streams under non-protective regulations, and better than a three to one favorable trend among special regulated water. These ratios almost exactly match those that I arrived at independently in 1993.

This report shows that without specific objectives, and use of 'control' sections, it is impossible to measure success. In attempting to provide a reason for failing to meet limited but vague objectives, such as improving standing stocks, vagaries of nature are blamed. But why did the streams under special regulations respond positively over the same extended time period? There can be little doubt that after 14 years of Class A management, the majority of our wild trout streams have not shown a positive response to current statewide regulations.

These results should not be surprising. At Wild Trout I-IV Conferences, many well known fisheries scientists warned that without protective regulations, wild brown trout populations become vulnerable under annual angling pressure of between 150 to 400 hours per acre, as do brook trout with use as low as 40 hours per acre. According to the July 1977 American Fisheries Society Bulletin, and confirmed by a 1991 AFS study,

Pennsylvania has the most licensed anglers per acre in the nation and the most angling hours per water acre. According to the National 1985 Fishing and Boating Inventory, this equates to trout angler use exceeding ^{>1400} ~~1200~~ angler hours per acre in Pennsylvania. With this kind of demand, and the explosive improvement of angling equipment, expertise, ability and willingness to travel, combined with recent books exposing most of our best streams, there is no way to hide our wild trout streams from this pressure. Inexplicably, our statewide creel limit of 8 is higher than any of our neighbors and among the highest in the nation.

But take a look at Maryland, whose trout resource is only a tenth of ours, and until recently had generally poor wild trout populations. Under Dr. Robert Bachman's able leadership, the creel limit for wild trout streams was reduced from five to two and stocking was terminated; a few high pressure streams were converted to Catch & Release. Trout populations exploded, increasing by up to 3000% in C&R area, and to over 100 pounds per acre for most wild trout streams. Bob told me that one reason he thinks it has worked so well is that harvest-oriented fishermen are often unwilling to hike in to a wild trout stream in order to kill just two trout. Under a 5 trout limit, few of these streams supported acceptable populations. The 'meat fishermen' apparently now concentrate on stocked water which permits a 5 trout harvest.

Here are a couple of germane statistics to tuck under your

fishing hat: Pennsylvania has 7 million trout available to be caught annually. Five million catchables are Commission stocked; another million are raised and stocked by COOP nurseries. We have about 25,000 stream acres that support significant wild trout populations. Assuming a highly optimistic population of 150 legal size wild trout per acre, this equates to 3.8 million wild trout. At most, 80% of the stocked and COOP fish (4.8 million) and 40% of wild adults (1.5 million) can be harvested, ^{a total of 6.3 million trout.} This all equates to about six trout annually to each trout angler. Does that figure make our eight trout daily limit seem a bit generous? It also works out to just one and a half wild trout annually per angler. From that perspective, a daily wild trout creel limit of two trout also appears just a bit high.

I manage a private fishery subject to about 500 angler days per acre annual use. Club anglers attain far above average catches--1.9 trout per hour--from our catch and release water. Our surveys indicate that the estimated 2000 adult trout population yields a 4000 trout annual catch, which means the average trout has been caught and returned twice. Our management cost is a fraction of the inflation adjusted cost to the Fish Commission when it managed the stream. Our members willingly pay \$500 per year for the privilege of fishing our enhanced water.

Only creel limits, properly set, will most equitably distribute

the harvest. If the 10% who creel 90% of the fish could be made to kill just 10% fewer, it would mean the other 90% would be given the opportunity to double theirs. The icing on this cake is that if we do kill fewer, there will be more and larger trout in the streams for everyone to enjoy.

The Yellowstone Trout Symposia (1974, '79, '84, '89, '94) brought together what has been referred to as the greatest gathering of ^{TCP} trout managers ever assembled on this continent. The prevailing theme--most repeated--was that overharvest of wild trout (followed no doubt by habitat degradation) was the primary 'limiting' factor contributing to the pervasive decline of unprotected wild trout populations.

Following ~~are~~ ^a are a few of the state and university fisheries scientists (plus three other acknowledged authorities) who addressed one of the first four -1974-1989- Wild Trout symposia at Yellowstone ^{and} spoke of the need of restrictive regulations to protect wild trout waters from excessive harvest:

Warren McNall, NM-'74, Jim McFadden MI-'74, Bob Hunt WI-'74, (and later) Bill Luch TU-'74, Nat Reed, Interior Secretary, Keynoter-'79, Bob Behnke CO-'79 & '89, Fred Eiserman WY-'79, Ed Kochman CO-'79, Ron Marcoux MO-'79, Greg Lilly WY-'79, Lee Wulff International Writer & Lecturer-'79, Paul Mongillo WA-'84, John Deistadt CA-'84, Gerald Barnhart NY-'84, Jerry Wells, MO-'84, Robert Wiley-^{WY}'89, Robert Bachman-^{MD}'89, John Cartright-BC '89.

Dr. Robert Gresswell of Oregon state, after five years observation of the impact of the great Yellowstone Park fire, concluded that overharvest did "much more harm than the fire."

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