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Trout Committee

To: Wendell J. Lorio, Secretary-Treasurer, Southern Division AFS

From: Hallett D. Boles, Trout Committee Chairman

TROUT COMMITTEE WORKSHOP MEETING, JUNE 19-20, 1975

The first meeting of the Trout Committee in 1975 was held at the Fannin Inn at Blue Ridge, Georgia. On June 19, 11 members and three guests floated the Blue Ridge Tailwater from the dam to Copperhill, Tennessee to inspect the site of a new trout study to be conducted by Georgia, TVA, and the U. S. Fish and Wildlife Service.

The meeting held on June 20 was attended by the following members: Monroe Schmidt, Ark; Russell England, Ga; Thomas Hill, University of Georgia; Bonny Laflin, Ky; Bill Bonner, N.C.; Randy Geddings, S.C.; Robert Bounds, Tex; Brown Nevels, S.C.S.; Tommy Sheddan, TVA; Monte Seehorn, USFS; and Hallett Boles, U.S.F.W.S., Chairman. Guests in attendance were: Richard Fatora, Ga; Hayden Ratledge, N.C.; and Douglas Petersen, TN.

The report given by Don Hill at the 23rd Southeastern Game and Fish Commission Conference was read. The topic of heat budget models, submitted at that meeting, was proposed for the Southern Appalachian Trout Symposium, but the committee was presently advised that the Etowah Study would be a substitute topic pending arrangements by Don Hill (TVA) and Bud Ratledge (N.C.).

Suggestion was made that the chairman send Bob Raleigh (VPI) a list of Trout Committee members to ensure that they receive invitations to attend this Trout Symposium at VPI.

Monte advised members of the Channelization Conference to be held at the Belle Meade Motel in Harrisburg, Va. 8/15-16/75, which should include some trout papers. He will send agendas to all members.

Having previously floated the Blue Ridge Tailwater, members were solicited for preliminary discussion on the approach to obtaining fishing pressure estimates in the forthcoming investigation. Suggestions were made such as the utilization of NASA, U.S. Army Ranger helicopters, SCS aerial photos and random point checks.

Scheduled reports began with Rich Fatora substituting for Russ England's discussion of the Blue Ridge Tailwater Project. Russ also missed the float trip due to illness. Rich outlined the project plans, including the problems of limited access and questionable use of fixed wing aircraft to obtain pressure counts. Plans include fish population sampling, bottom fauna, water quality, growth, and food habit studies. Trout stocking will include 150,000 brown, rainbow and brook trout fingerlings in 1976 and 30,000 catchable rainbows in 1977. Stockings will compare time period as well as stocking size. Publicity and development of new access areas should ease the problem of creel census.

Doug Petersen reviewed the introduction and present status of the Ohrid trout. This exotic salmonid from Yugoslavia has now become significant in the Lake Watauga fishery in northeast Tennessee. The requirement of deep oxygenated water during summer stratification has been revealed by their depth of catch being about 20 feet below that of rainbows. They have survived in appreciable numbers to the trophy size (over 3 pounds in 1974) with a poundage return (over 200%) at least equaling that of rainbows. Plans to continue study of the Ohrid were discussed which include creel census, investigation of natural reproduction, continued stocking, food habits and growth.

Monroe Schmidt gave a historical account of the development of Arkansas' renowned trout fisheries in both tailwaters and reservoirs. A breakdown on the stocking quotas by geographical areas and water types was followed by a very interesting report on the initial production allotments from the National Fish Hatcheries and the additional production, by lake cage culture, from nine-inch trout to the pound size before their release some five months thereafter. Dock owners' participation and the State's operation of this cage culture has become a large-scaled undertaking. Public interest, as indicated by the sale of trout permits, has grown accordingly. The caged period of trout production costs $0.58 per pound.

Tom Hill discussed the dual crop culture of rainbow trout and channel catfish at the University of Georgia's Coastal Plain Experiment Station, Tifton, Ga. Following catfish culture in summer months in deep well supplied water in raceways, trout averaging 0.1 lb. were raised from December to March (100 days) to 0.7 lb. with a conversion factor of 1.29 and survival of 82%. The trout were bought from commercial sources and marketed as a catch-out pond product at $1.50 per pound.

Randy Geddings discussed the new two story trout fishery at Lake Jocassee, a pumpback storage reservoir of 325-foot depth. Both brown and rainbow trout have utilized threadfin shad and produced trophy-sized fish generally caught from 30 to 50 feet in depth. Brown trout have been responsive to trolling. The pumpback operations have not disturbed stratification. Fluctuations of lake level may retard bass production and be an advantage to trout.

Brown Nevels aired the need for more input by fishery biologists in the initial stages of S.C.S. watershed planning. Too often the document review

period has been reached before impact on the fishery habitat is considered, and consequently, it is often too late.

Bill Bonner described the introduction of Mysis relicta (possum shrimp) in Nantahala Lake. So far, their establishment is uncertain; however, it may often take five years before they become abundant. The heavy production of Hyalella (scuds) which may have been concurrently introduced is fulfilling in the interim. The poor results of producing the Appalachian brook trout normally in the hatchery will be followed by a method using frozen sperm from wild males and domestic female eggs.

Monte Seehorn submitted a question on the use of bottom fauna diversity, along with water quality monitoring, as indices of siltation to aid in abating watershed disturbances. Several remarks by members alluded to the complexity of quantifying data on bottom fauna changes in the degradation tenure affected by sedimentation. The flexibility of turbidity standards was also pointed out.

Bonny Laflin distributed Jim Axon's tailwater paper presented at the 23rd Southeastern Meeting as a Trout Committee release. He described Kentucky's trout program including put-and-take, subcatchable put-grow-and take, the new Laurel Lake two story fishery, and cooperative trout fisheries in Daniel Boone National Forest. The problem of over publicizing stockings was discussed.

Bob Bounds explained the unique tailrace fisheries in Texas where every dollar spent for stocking has resulted in $5.00 recreation return. Texas has had a problem of obtaining Federal trout and has resorted to purchasing commercial fish. Next year Texas will receive an allotment turned down by Missouri. Bob has received good support from Trout Unlimited and Fly Fishers who have supplied brown trout eggs among other support. One new reservoir in north Texas has produced large mature rainbows, but facilities were not available for egg taking. Several Forest Service streams in east Texas have been surveyed and are prospective trout waters. The importance of trout fisheries in some of the Texas streams was demonstrated by a cost ratio increase of 25 percent.

Tommy Sheddan summarized the progress of the Norris Tailwater project explaining the stocking, sampling, and plans for population inventory of Melton Hill Reservoir. The total 1974 data have not been received from N.C. State. The fishery has been limited in the last few months because of high flows. Fingerlings stocked in January 1974 now range from 12 to 15 inches.

New Project Discussions

Monte Seehorn submitted a committee project to delineate natural trout waters. Each member was asked to provide any information, in summary, of known introductions of trout which have resulted in self-sustaining populations. Each area should include stream qualifications in the ranges of elevations

extended, the habitat type, temperature ranges, associated fish and food species, and the trout survival tenure. Monte was appointed to head a subcommittee on this detail.

The frequency of trout committee members leading into discussions on the need for increased emphasis on brown trout management has finally culminated in adopting a project aimed at fulfilling this need.

The activation of the tri-agency Blue Ridge Tailwater Study incorporated some of the thinking and interest of the Trout Committee, by the inclusion of the multi species test stocking of trout previously mentioned.

Remarks on the problems of the availability of brown trout included: their susceptibility to hatchery-borne disease, the common view that they are difficult to rear in normal production hatchery operations, and the view that they don't furnish a productive fishery for the average or casual angler. However, other remarks noted the merits of the brown trout's ability to compete relatively better with nontrout species, and their ability to provide a lasting fishery of significance for the more serious anglers, whose interests impart from the standard catch rate index of fishing success, by electing qualitative options of fishing success such as fish size and skill requirements.

The consensus of the group's attitude was that many waters in the Southeast are more suitable for brown than other trout species; but too few browns are available for adequate stocking. Consequently, the group submitted the proposal to initiate a resolution to the Southern Division's Resolution Committee requesting the U. S. Fish and Wildlife to increase production of brown trout to satisfy the existing needs as determined by biologists in charge of trout management in the southeastern states.

Bill Bonner was appointed chairman of a subcommittee to formulate this resolution. Monte Seehorn will assist as a subcommittee member, and one or more members will be appointed as needed.

HDB:DW
CC: Glen McBay, President
Trout Committee Members

RESERVOIR TROUT FISHERIES IN ARKANSAS

by

Monroe Schmidt
Game and Fish Biologist II
Arkansas Game and Fish Commission

Arkansas' trout fishery was born in 1948, when 600 four-to-six rainbow trout were obtained from the U. S. Fish and Wildlife Service Hatchery at Neosho, Missouri, and experimentally stocked in the tailwaters of Norfork Dam, which had been in operation since 1944. The young trout showed excellent survival and growth. In 1949, brown trout were introduced, and from 1949 through 1951, a total of 19,400 rainbow and brown trout were stocked. Currently, approximately 35,000 rainbow trout averaging nine inches in length are stocked in this four and one-half (4½) mile tailwater annually.

When commercial power generation was begun at Bull Shoals Dam in 1952, Arkansas was provided with another potential tailwater fishery. The Bull Shoals tailwater trout fishery developed well, and has since become known far and wide for its excellent fishing. From 1952 through 1958, approximately 700,000 trout (both rainbow and brown) were stocked in this tailwater, and today approximately 715,000 catchable rainbow trout averaging nine inches in length are stocked annually.

Because of the demand for trout created by this newly-established trout fishery in Arkansas, the U. S. Fish and Wildlife Service constructed the Norfork National Trout Hatchery below Norfork Dam in 1957. In 1964 this facility was enlarged, increasing its production capacity to about two million trout annually.

Following the completion of other federally-constructed reservoirs in Arkansas, with their attendant trout habitats, the Greers Ferry National Trout Hatchery was constructed and began producing trout for the state's waters in 1966. Today, the state of Arkansas receives 1,509,000 catchable trout annually from these two facilities, approximately 430,000 of which are allocated to the state's two-story reservoirs.

Several years after the impoundment of Lake Norfork, a trout tagging and stocking program, utilizing trout from the new Norfork Hatchery, was begun on the lake to determine the feasibility of stocking rainbow trout into the lake to create a two-story fishery. Tagging results and water quality studies indicated that a successful two-story fishery could not be developed on this lake with a high degree of consistacy.

In 1961, Arkansas fisheries biologists began a study on Bull Shoals Lake to determine whether a two-story fishery could be developed on this 45,000 acre federal reservoir, again utilizing trout from the Norfork Trout Hatchery. From 1961 through 1963, 49,000 ten-inch rainbow trout, including 3,000 tagged trout, were stocked into the lake. From 1964 through 1966, approximately 429,000 ten-inch rainbows were stocked, with 500 of these being tagged. Results of the tagging study were encouraging, showing good growth and survival of the trout and fair fisherman utilization of the new fishery. Water quality data also indicated desirable trout habitat in the reservoir. After that time, the trout fishery on Bull Shoals Lake was considered to have evolved out of the experimental stage, and from 1967 through 1969 the lake was stocked with approximately 478,000 rainbow trout. Since 1970, the annual allotment of trout for Bull Shoals Lake has been 205,000 fish averaging nine inches in length.

Since the development of the Bull Shoals Trout Fishery, other Arkansas reservoirs have been developed as two-story lakes but none of these have achieved the prominence of the Bull Shoals Fishery. The other two-story lakes in Arkansas are Greers Ferry Reservoir (two-story fishery begun in 1966-67), Lake Ouachita (two-story fishery begun in 1966-67), and Lake Hamilton (two-story fishery begun in 1968-69). The largest of these additional two-story fisheries is Lake Ouachita, which receives 100,000 trout annually.

A study conducted on Lake Ouachita in 1970 by state fisheries biologists indicated that there was intensive predation on freshly-planted trout (average size nine inches) by largemouth bass and chain pickerel. To combat this problem of predation on trout stocked in our two-story lakes, the Arkansas Game and Fish Commission in 1971 entered into an agreement with a private commercial fish farmer to grow-out trout for some of these lakes. Under the terms of this agreement, the state of Arkansas transports a portion of the annual allotment destined for the two-story reservoirs to one of our state-owned lakes where the fish farmer provides cages, feed, and care for the trout during the winter months. When the water begins to warm in the spring, the state provides the trucks and manpower to transport the resultant larger fish (generally in the 1/2 to 3/4 pound category) to the desired reservoir. This procedure has been used for three years for portions of the Lake Catherine, Lake Hamilton, and Lake Ouachita trout allotments.

On Bull Shoals Lake, beginning in 1972-73, we approached the predation problem in a somewhat similar manner. Enlisting the cooperation of a number of marinas in the area, we placed 20,000 nine-inch trout in twenty cages around four of the marinas. We supplied feed, cages, and any technical assistance needed. The dock operators only obligation was to see that the trout were fed the recommended amount of feed daily. The 20,000

trout were placed into the 4'x4'x8' cages on December 29 at an average weight of 5 ounces, and released from the cages on April 20, at an average weight of 9.6 ounces.

The same program was continued in 1973-74, except that we used 30,000 trout in 28 cages. The trout averaged 4.8 ounces when placed into the cages in early December, and 13.3 ounces when released in mid-April. This past year, 1974-75, we enlarged the program to include 50,000 trout in 45 cages. Average weight at initial stocking into the cages in mid-November was 5.1 ounces, and overall average weight at release on March 28 and April 18 was 12.9 ounces each.

For the current year, 1975-76, we are planning a greatly enlarged cage-rearing operation on Bull Shoals Lake, in which we, the Arkansas Game and Fish Commission, will assume all duties and responbilities of the grow-out program. We are planning to install four net-type cages into which we will stock the entire annual allotment of 205,000 trout. To accommodate these cages, a small, protected cove will be blocked off, and the cages positioned and secured inside this restricted area. The trout will be placed into the cages as early as possible, and released into the lake as late as possible, to obtain maximum growth during the winter season.

Analysis of creel census data recorded on Bull Shoals Lake from 1971 through 1974 by the Arkansas Game and Fish Commission, Missouri Department of Censervation, and the U. S. Fish and Wildlife Service, shows that for these four years 157,900 trout weighing 143,000 pounds were harvested from the lake. During this time, approximately 820,000 hatchery trout weighing 250,000 pounds were stocked in Bull Shoals Lake. The majority of these trout were caught near the dam during night fishing under lights. We are expecting our full-scale cage-rearing program to greatly enhance this reservoir trout fishery and anticipate the expansion of this type operation to include several of our two-story reservoirs.

MS/tw

7/16/75