

ANGLING RETURNS FROM LITTLE RIVER, GREAT SMOKY MOUNTAINS NATIONAL PARK, 1950

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This report deals with a creel census on Little River above Elkmont, in Great Smoky Mountains National Park, Sevier County, Tennessee, for the 1950 season. The need for accurate data on the quality and quantity of trout fishing in Park streams was felt in conferences held between State and Federal officials, and found necessary before answering the inquiries of Park visitors and local anglers. The last published data gives creel census reports from Park streams only through 1940. There has been no organized creel census taken since 1940, although Park wardens and rangers have made periodic checks on numbers of fishermen and some unpublished data of value are available in Park files. The State Game and Fish Commission provided a full time attendant for one creel census station during the 1950 season and gave technical supervision to the project. The National Park Service provided an appropriate sign and a small shelter for the attendant.

METHODS

The trout fishing season was open in all Park streams (with only a few exceptions) from May 16 through August 31. There are no size limits on trout that may be kept, and fishing is permitted from sunrise to sunset, daily. Both artificial lures (one hook only), and natural bait (except minnows) are allowed. The creel limit is 10 trout per day or in possession. Little River offers an exceptional opportunity to get creel data since all fishermen must pass by the station upon entering and leaving the Area. Jewel Clabo, a partially disabled veteran living near Gatlinburg, served as the attendant. General supervision was given by the authors.

According to Park Service data, Little River above the station offers approximately 22 miles of trout supporting water with about 12 miles of this readily fishable. The stream can be readily waded, is clear almost always, becoming cloudy only after heavy rains. Its fall is rapid, and its bed is of boulders and rubble. The forest land of the watershed is second growth cove hardwoods. All trout were measured to the nearest even inch and each creel weighed (Fig. 1).

RESULTS AND DISCUSSION

The catch by two-week periods is given in Table 1. The average creel of those catching fish was 7.3 trout which weighed slightly over 1 pound. Counting in the 815 (about $\frac{1}{2}$ of the total) anglers who caught no fish, the average day's fishing netted 4.9 trout.

It will be noted that fishing experienced its greatest intensity the first two weeks of the season but that the average creel varied relatively little throughout

U. S. TENNESSEE
 NATIONAL PARK SERVICE-COOPERATING-STATE GAME AND FISH COM.
 CREEL CENSUS-LITTLE RIVER 1959

Date: _____ Weight of Fish: _____

	6"	8" *	10"	12"	14"	16" & over	Total
Brook							
Rainbow							

*Trout are measured to the nearest even inch

Marked Trout Recovered _____ Brook _____ Rainbow _____

Residence of Angler: _____

State: _____ County: (if from Tennessee) _____

Type of bait used _____

Natural: _____ Artificial: _____

Comments by fisherman (if any) - use reverse side

Checked by _____

Fig. 1. Sample of creel census card used in 1950.

Table 1. Summary of creel returns, Little River, 1950 ^a.

Size (inches) ^{b,c,d}	Number of Fish		
	Brook	Rainbows	Both
6	459	5,851	6,311
8	191	4,784	4,975
10	132	638	770
12	14	27	41
14	0	3	3
16	0	1	1
Total	796	11,304	12,100

^a Total fisherman days: 2,467.

^b Total weight of all fish: 1,760 lbs.

^c Average creel: All anglers, 4.9 trout, successful anglers, 7.3 trout.

^d Average weight of creels of successful anglers: 1.06 lbs.

the period (Table 2). The average size of the trout taken decreased as the summer advanced. The only explanation for this is that possibly the older and larger trout became more wary, while more of the smaller trout became large enough to keep, and continued to be more readily taken, particularly by the inexperienced angler.

Of the 2,467 anglers reporting, 1,221 used natural bait (minnows prohibited), and 867 artificial lures; 379 used both natural and artificial bait.

The numbers of anglers reporting probably does not represent the total number on the stream, since a few may have left the stream after the station closed, or left by the adjoining ridge to avoid having their creels checked. The error caused by incomplete returns is thought to be less than 2% of the total, and is not considered in the calculations.

Table 2. Fishing returns by two week periods.

Period	Number fishermen	All brook	Marked brook	Rainbows	All trout	Average creel	% of trout 10" or over
May 16 - 31	546	284	258	2,598	2,882	5.3	11
June 1 - 15	309	61	18	1,436	1,497	4.8	8
June 16 - 30	394	80	14	1,746	1,826	4.6	6
July 1 - 15	310	73	9	1,342	1,415	4.6	4
July 16 - 31	266	67	3	1,318	1,385	5.2	5
August 1 - 15	268	113	3	1,223	1,336	5.0	4
August 16 - 31	374	118	1	1,641	1,759	4.7	4
Total	2,467	796	306	11,304	12,100	4.9	6.7

It is noticeable that 74% of all anglers came from the four counties of East Tennessee nearest the Park. Sevier County alone accounted for almost one-half of Tennessee's trout fishermen using the stream, and 40% of all the anglers reporting. The success attained by the local anglers is of especial importance to the National Park Service in its effort to provide good fishing to all Park visitors. As shown in Table 3, Tennessee anglers caught 94% of all the trout taken, while Sevier County anglers alone accounted for 49% of the trout taken. Out of State visitors made up 17% of the total anglers but caught only 6% of the total catch. Possibly a good share of those were actually caught by local guides.

The dominance of rainbow trout is interesting and bears out the conclusions previously given by the author in 1942, to the effect that the stocking of brook trout in waters already populated by rainbow cannot be depended upon to bring about a shift in population to brook trout. The National Park Service would like to accomplish this shift or at least aid the native brook trout whenever possible. With this in mind, 500 brook trout 8 to 12 inches in length were stocked in Little River above the creek station in March, 1950. These were liberated in head water streams and all were marked by clipping the right pelvic (ventral) fin. Of these, 306 (61%) were returned. This is considered a good return for hatchery reared fish but is not unusual in Southern Appalachian streams. It is thought that the number of trout taken may be considerably greater than the report shows. There was some pre-season fishing reported from the area where the fish were released, and it is thought that some were smuggled past the station. The value of these fish to fishing was evidently slight. No rainbows were stocked above the station in 1950 and no trout in 1949, so all the rainbows and 62% of the brook trout taken can be considered stream reared fish. The taking of any previously stocked trout is doubtful. A statement by Dr. Lloyd Smith in a report "Recommendations for Management of Great Smoky Mountains National Park Fishery," in 1947, is borne out: "Stocking (*of Little River*) above the barrier (*site of creel station*) is not necessary to maintain good fishing."

In order to gain some idea of the population of trout remaining in the study area, cresol (phenol coefficient 30) was used at 3 sites. Station 3 was just above the creel station in the most heavily fished portion of the study area; Station 2 was on Fish Camp Prong; and Station 1 on the Three Forks Prong. In 300 yards of affected stream at Station 3, 119 rainbows were counted; at Station 2, 60 rainbows were counted in 100 yards of stream; and at Station 1, 90 rainbows were

Table 3. Residence of anglers and their catch.

Non-residents ^{a,b}		Tennesseans ^{c,d,e,f}	
State	Number fisherman days	County	Number fisherman days
Ohio	44	Sevier	994
Georgia	42	Cocke	399
Illinois	40	Knox	319
Virginia	39	Blount	114
Kentucky	34	Others	211
Indiana	33	Total	2,037
North Carolina	28		
Alabama	24		
Michigan	22		
Florida	23		
West Virginia	16		
Pennsylvania	15		
South Carolina	10		
Texas	9		
Missouri	7		
Maryland	7		
New York	7		
Mississippi	6		
California	5		
Oklahoma	4		
Louisiana	4		
Arkansas	2		
New Jersey	2		
Kansas	2		
Panama	1		
Iowa	1		
Massachusetts	1		
Nebraska	1		
D.C.	1		
Total	430		

^a Trout caught by non-residents: 722.

^b Average creel of non-residents: 1.2.

^c Total creel, all Tennesseans: 11,378 trout.

^d Average creel, all Tennesseans: 5.5 trout.

^e Total creel, Sevier County: 5,961 trout.

^f Average creel, Sevier County: 6 trout.

seen in 150 feet of affected stream. All size groups of rainbows taken by fishermen as well as young of the year were represented in the samples. The study was made September 5, five days after the close of the fishing season. Indications are that sufficient trout remain in the stream to provide fishing of a similar quality in 1951.

SUMMARY

Between May 16 and August 31, 2,467 fisherman days were recorded on Little River, Great Smoky Mountains National Park, above the creel station, on about 12

miles of fishable water. The catch consisted of 11,304 rainbows and 796 brook trout. The creel of successful anglers averaged 7.3 fish weighing slightly over one pound. Approximately $\frac{1}{3}$ of the anglers caught no fish. Of 500 brook trout stocked in the area covered by the census 306 or 61% were recovered by anglers. Post-season examination of 3 sample sections of stream revealed a good population of rainbows remaining. Rainbows are in complete dominance except in headwaters where native brook trout occur.