

A Creel Survey of the Snagging Fisheries of Two Tailwaters on the Coosa River, Alabama

E. D. Catchings, Alabama Game and Fish Division, Fisheries Section, P.O. Box 158, Eastaboga, AL 36260

Abstract: During March, April, and May 1979, a nonuniform probability creel survey of snag fishermen was conducted in the tailwaters of Logan Martin and H. Neely Henry reservoirs located on the Coosa River in Alabama. Fishermen harvested an estimated 5,278 and 4,640 fish in the 2 reservoirs, respectively. Daily catch was 57 fish/day at Logan Martin tailwater and 50 fish/day at Neely Henry tailwater. White bass (*Morone chrysops*) were the predominant fish in the creel. Catch/unit effort (CPE) was 0.75 fish/hour at Logan Martin tailwater and 0.89 fish/hour at Neely Henry tailwater. The typical fisherman traveled less than 47 km, was not species specific, had less than 5 years snagging experience, spent an average of \$6.68 per trip, and fished for food and sport.

Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 37:472-476

Fishing tailwaters below hydroelectric dams is popular and productive. A fishing method called snagging or snatching is practiced by sportfishermen in tailwater areas throughout Alabama. In this method, 1 or more large treble hooks are tied to the fishing line at intervals of approximately 15 to 25 cm and a heavy weight is tied to the end of the line. Either conventional spinning or baitcasting gear or a large stout pole is used to cast or swing the hooks into the water. The hooks are then retrieved by means of short, powerful jerks of the rod. Fish swimming into the paths of the hooks are indiscriminately caught on the line.

There is a growing sentiment to make snag fishing illegal. This sentiment is supported by views of those fishermen who believe that it is an unsportsmanlike method for catching fish and that excessive numbers of game fish as well as non-game fish are being harvested.

No harvest statistics pertinent to Alabama's snagging fishery were available to verify or reject the public belief of excess harvests of game fish. Therefore, it was decided to conduct a creel survey of snag fishermen to establish baseline data on harvest rates.

Methods

This study was conducted in the tailwaters of H. Neely Henry and Logan Martin Dams. Both are hydroelectric generating plants operated by the Alabama Power Company and are located on the Coosa River in East-central Alabama. H. Neely Henry Lake is a 4,548 ha impoundment immediately upstream from Logan Martin Lake, a 6,178 ha impoundment. The tailwaters of these 2 dams have become 2 of the more popular areas for snag fishing in Alabama.

Snag fishermen below H. Neely Henry Dam fish predominantly from the bank on the east side of the river. They fish in an area extending from directly below the turbine discharges downstream to approximately 90 m away. Snag fishermen at Logan Martin Dam fish on the west bank from the fishing platform or the bank. The fishing platform is located immediately below the dam and adjacent to the turbine discharges. Bank fishermen fish from below the fishing platform to about 45 m away.

To decide at what hours to conduct the survey, a questionnaire was sent to selected conservation officers assigned to areas with a snagging fishery. Questions were asked in order to determine the prime months for snagging, if certain days were better than others for observing snaggers, the time of day fishing took place, and what generating conditions produced the best conditions for snagging. From the results of the questionnaire, it was decided to census 5 days a month, 3 weekdays and 2 weekend days, during the months of March, April, and May 1979.

It was also evident that hydroelectric power generation had to occur for successful snagging. Therefore, sampling periods were selected on the probability of power generation determined from data supplied by Alabama Power Company for the previous 8 years. Each time period was 5 hours in length, the first beginning at 0700 hours and the last ending at 2200 hours. These time periods were assigned a random number range proportional to the possibility that power generation would occur and then the sampling time periods were selected randomly. Days to sample were assigned equal probability based on the number of weekdays and weekend days in each month.

When possible, fishermen were interviewed upon completion of their fishing trips or at the end of the time period if they were still fishing. Each snag fisherman interviewed was asked the following questions: (1) the time started fishing; (2) why he was fishing (for bait, food, sport, or food and sport); (3) the species fished for; (4) species caught and returned; (5) how many years the fisherman had been snagging; (6) what were the best conditions for snagging; (7) the distance traveled to fish; and (8) the expenses for that fishing trip. In addition, the species, number, and total length (mm) of all fish in possession at the time of the interview were recorded.

The data was analyzed following the approach used by Malvestuto et al. (1978) with the exception that fish were expressed in numbers caught rather

than weight. The catch for each species or fish group during the 3 month survey period was obtained by determining the percentage of catch for each fish group based on the actual numbers of fish counted in the creel. This percentage of catch for each fish group/species was then multiplied by the total catch for all fish to determine total catch for each fish group/species for the survey period. This procedure was recommended by Malvestuto (pers. comm.).

Results and Discussion

A total of 388 snag fishermen were interviewed during the study. Of that number, 62.4% were surveyed at Logan Martin dam tailwaters. The average number of years of snagging experience/fisherman was 4.3 and 4.1. for Logan Martin and H. Neely Henry dams respectively.

Fishing for sport only accounted for 16.8% of the total responses. Food was the primary reason for the trips of 29.6% of the respondents. Fishing for both food and sport was the response from 53.1% of the fishermen interviewed. Attempting to collect shad (*Clupeidae*) for bait fish recorded a 0.5% response.

Most fishermen stated that they were fishing for any species of fish, while 38.9% said they were attempting to catch non-game species (mainly catfish, *Ictaluridae*) and 17.5% were seeking game species. The majority of anglers would catch and release shad, suckers (*Catostomidae*) and carp (*Cyprinus carpio*); very few anglers released gamefish although this was occasionally observed.

The response to the questions concerning the best flow or current conditions for snagging varied. Many anglers expressed a preference for a particular turbine discharge or combination of turbines to provide good fishing. Some anglers had no preference. However, most agreed that power generation had to occur for best snagging. There was a significant group of catfish fishermen not part of the formal survey (questioned at other hours than those in the original study design) at H. Neely Henry dam who felt fishing was best at night when the turbines were off.

The average distance traveled by fishermen to snag fish was 46.8 and 45.9 km for H. Neely Henry and Logan Martin dams, respectively. The farthest distance traveled by 1 fisherman was 1,287 km. However, that distance was not traveled to specifically participate in the fishing. The cost for fishing trips averaged \$5.54 and \$7.81 for H. Neely Henry and Logan Martin dams, respectively.

For the period sampled, Logan Martin tailwater snag fishermen harvested an estimated 5,278 total fish or about 57 fish/sampling day (Table 1). Of these fish, 43 were game species and 14 were non-game species. Snag fishermen at H. Neely Henry tailwaters harvested an estimated 4,640 fish or about 50 fish/day (Table 1). Game fish harvest averaged 44/day and non-gamefish

Table 1. Total catch and daily catch estimates (numbers) by fish groups/species for H. Neely Henry and Logan Martin Tailwaters (March–May 1979).

Species/group	H. Neely Henry Tailwater		Logan Martin Tailwater	
	Total catch	Daily catch	Total catch	Daily catch
Largemouth bass (<i>Micropterus salmoides</i>)	419	5	383	4
Spotted bass	165	2	719	8
Crappie	1,361	14	321	3
Sunfish (Centrarchidae)	178	2	535	6
White bass	1,957	21	2,019	22
Catfish	433	5	949	10
Rough fish	127	1	352	4
Total fish	4,640	50	5,278	57

averaged 6/day. The daily catch of gamefish at each tailwater was almost identical while the higher total catch at Logan Martin tailwater can be attributed to the greater numbers of catfish and rough fish harvested.

The most abundant gamefish in the catch at both tailwaters was white bass (*Morone chrysops*) followed in abundance by crappie (*Pomoxis*) at H. Neely Henry tailwater and spotted bass (*Micropterus punctulatus*) at Logan Martin tailwater (Table 1). The spotted bass catch is misleading, however, since heavy harvest of spotted bass was observed only on 1 day and on other days the spotted bass catch was either very low or non-existent.

The CPE for the 3-month survey period was 0.89 fish/hour for H. Neely Henry tailwater and 0.75 fish/hour for Logan Martin tailwater. Catch rates and harvest data from similar snagging fisheries were not available in the literature. However, comparing this snagging fishery to conventional tailwater fisheries indicates that snagging catch rates were not excessive. A CPE of 0.7 fish/hour was determined in a creel survey during 1981–1982 for the Lake Mitchell tailwater fishery, a similar Coosa River Impoundment (unpubl. rep. for the Alabama Department of Conservation and Natural Resources contract with Auburn University, Department of Fisheries and Allied Aquacultures, W. D. Davies). This refutes the belief that excessive numbers of gamefish are being harvested by snagging. The period sampled (March to May) on H. Neely Henry and Logan Martin tailwater is the peak of the snagging fishery and fishing effort drops drastically during other months of the year.

The Davies' creel survey also estimated the CPE for the conventional sport fishery on Lake Jordan to be 1.1 fish/hour. Lake Jordan is a 2,753 ha reservoir located immediately downstream from Lake Mitchell, a 2,368 ha reservoir.

Comparisons to tailwater fisheries in other areas of the country were also favorable. A warm tailwater fishery below Carlyle Reservoir in Illinois yielded

1.37 fish/hour to boat fishermen and 0.83 fish/hour to bank fishermen (Fritz 1969). Fishermen at Taneycomo and Clearwater tailwaters in Missouri caught 0.55 fish/hour (Fry 1965). The catch at these tailwaters consisted of warm-water fish species.

It would be useful to compare the snagging harvest at H. Neely Henry and Logan Martin tailwaters to the conventional sport fishing harvest at these tailwaters. However, this data is not yet available. Although the number of fishermen sampled was low, we feel that the information gained was typical of the fishery because there are few people attempting this type of fishing. On several sampling occasions the same fishermen were interviewed.

The typical snag fisherman at H. Neely Henry or Logan Martin tailwaters was a local resident with less than 5 years fishing experience attempting to catch any species of fish for purposes of food and sport and spending about \$6.68/fishing trip.

Literature Cited

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