
Notes on the Return of Tagged White Bass

HARRY BISHOP, Dept. of Wildlife Conservation, Woodward

In March and April of 1957, 491 white bass, *Roccus chrysops*, were tagged and released in 4,900-acre Canton Reservoir by the Oklahoma Department of Wildlife Conservation. The purpose of this project was to gather first-hand information on the new "spaghetti" tag method of marking fish and to study the information received when these tagged fish

were recaptured and the tags returned. In 1957, 5.5 percent of the marked fish were recaptured and an additional 4.68 percent (23 tags) were returned through November 1, 1958, making a total of 10.18 percent.

Only three of the fish recaptured in 1958 were seen by project personnel. All three of these had been frozen with the tag in place. These fish had grown well and were in good condition, except there was some "irritation and erosion" of the flesh around the area where the tag had been inserted. A similar condition was reported by Tebo (1956). In spite of the somewhat poor condition of the flesh in the wound area, all of the tags remained firmly in place and none appeared to be in danger of being lost. All of the information received with the tags indicated that the unobserved recaptured fish exhibited at least normal growth.

It is interesting to note that there is apparently a rather sharp division in geographical location of recaptures between the periods prior to and following June 26, 1958. All of the "spaghetti" tags returned in 1957 and all 14 of those returned through June 26, 1958 were recaptured in Canton Reservoir. After this date, or from July through October, 1958, all of the returns came from below Lake Overholser, which is used as a reservoir by Oklahoma City and is about 105 miles downstream from Canton Reservoir. The last 9 tagged fish to be recaptured had gone through the dam at Canton Reservoir and had passed Lake Overholser. In passing this reservoir, the fish either could have entered the lake and then gone over the spillway or they could have bypassed the lake entirely in a diversion ditch, depending on whether or not water was being stored by the Oklahoma City Water Department. The six fish caught in the area below Lake Overholser were taken on July 5, August 10 and 15, September 5 and 8 and October 4. Two other fish were caught on October 4 and 9 near Shawnee, which is approximately 170 miles downstream from Canton Reservoir. The fish caught farthest downstream was taken on October 4 north of Seminole about 207 miles from where it was released.

The longest period of time between release and recapture was 567 days. This was one of the fish caught near Shawnee. The average number of days of freedom for the fish recaptured in 1958 was 449.

It would be impossible to determine what part of these days of freedom were spent in making the movement downstream since the sluice gates were often opened at Canton Reservoir, during the summer and fall of 1957, for flood control purposes. Evidently fish could pass through and begin to move downstream unharmed in spite of the sudden pressure changes.

Provision is made for emergency releases during periods of upstream flood conditions by a system of tainter gates. Engineers at Canton Reservoir estimate that one of these large gates when opened two feet, with no head, discharges approximately 400 cubic feet of water per second.

On June 24, 1958 two of these gates were opened, releasing 1200 c.f.s. to the stream below. On July 1 three were opened, permitting approximately 1800 c.f.s. to be discharged. Flows of this magnitude continued through July 9. A peak flow of 2400 c.f.s. was reached and maintained from July 10 to 13, and on July 14 and 15 flows were reduced to 1200 c.f.s. and the gates were closed on July 16.

While these data pertaining to the movement of fish from reservoirs downstream during periods of large water releases is too limited to be conclusive, it should stimulate further work in this direction.

Project workers had expected tagged fish to move upstream to the Ft. Supply Reservoir area and be recaptured there. However, no tags

have been returned by fishermen upstream from Canton Reservoir.

LITERATURE CITED

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