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Using Traps for Catfish in Virginia Tidal Rivers

Virginia Fisheries Resource Grant
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ABSTRACT

The project tested a different way to commercially fish for catfish in the tidal rivers, while allowing by-catch and smaller catfish to escape. Ten traps were constructed of coated wire mesh and steel rod, equipped with an entry funnel, and fished alongside three strings of trot-lines in the same area and times. The test period covered September and October 2010 over a period of warm weather when salinity changed dramatically from 10 ppt to zero and water temperatures eased downward from 68 degrees to 60 degrees.

The trap design and all boat modifications operated as designed with only a few adjustments necessary. Basic fishing observations included salinity, water temperature, air temperature, turbidity, tidal information, visibility, sky conditions, and a few others. Lengths and weights of the fish were recorded for a sample of the catch. Catfish were consistently captured in the traps baited with menhaden but poorly so on the trot-lines, with a ratio of approximately ten to one. The catch was predominately blue catfish, with very few channel catfish and white catfish mixed in. Other fish species were non-existent in traps or on the lines.

Overall we were not commercially successful over the test period because of low prices. We have proven however, that this type of gear works well for catfish and is a great improvement over any form of trot-line operation.

DESCRIPTION

The commercial fishery for catfish in Virginia has averaged over 1.5 million pounds per year since 2001, with a value of 643 thousand dollars to 1.7 million dollars (dock value) per year depending on price for any particular year (VMRS statistics). The lowest price per pound was 34 cents in 2004 and the high was \$ 1.16 in 2006, with most other years hovering around 56 to 67 cents per pound. This compares favorably with many other food fishes caught in Virginia, and thus represent an important economic asset to the Commonwealth and its fishermen. When economic multipliers are applied that consider transportation, middlemen increase, increased employment beyond the docks, ice, storage, handling, cleaning, etc, and retail sales: the fishery is truly of multimillion dollar significance to Virginia and the East Coast

When the Virginia Department of Fish and Game introduced Blue Catfish into the James and Rappahannock Rivers in 1976, the catfish fishery was practically non-existent with a limited recreational fishery. Today both fisheries are booming with the blue catfish being the dominant species. The recreational fishery contributes at least additional millions to the State because the blue catfish has become the true "trophy species" of the rivers. Fish over 50 pounds are common and a new State record of 104 pounds was reached last year. Guide services abound and fishermen travel from all over to participate. Several tournaments are held each year in the rivers. To preserve and enhance the trophy fishery, regulations were passed in 2006 that limit the catch of blue catfish to one per day over 32 inches for the recreational and commercial fishery. The recreational fishery can take 20 per day of any species smaller than 32 inches, and the commercial fishery has no daily or quota limits.

As a commercial fisherman, I have fished trot lines for catfish in several of the tidal rivers. While efficient and easy to use, trot lines are not size selective and it is difficult to limit the by-catch. The project tested a possible better way to commercially fish for catfish in the tidal rivers. We have designed a fish trap that made our operation more efficient, while preserving the trophy fishery. It also allowed smaller members to escape, thereby allowing sustainability to the fishery. In fact, it would be very easy to be extremely size selective by adding cull rings and changing the funnels. We tested this idea by building and testing ten of these traps, and fishing them alongside our trot lines in the James, Pamunkey and Mattaponi Rivers.

These new traps cannot be purchased so we fabricated them. We then integrated the new devices with my trot lining operation and are reporting the results. We collected data onboard and have had it analyzed by a professional fishery scientist, and are providing this final report to the granting agency.

Using funds provided, we equipped a 42' work boat and made 20 lifts over 48 days in the Pamunkey River within 20 miles of Sweet Hall going as far downriver as West Point. Salinities were very high this year due to the summer drought, yet we often made good hauls in salinity above 4ppt. Several lifts landed (total) above 800lbs of Catfish with only 40 to 80 lbs on the trots. Lifting, rebaiting, and resetting the trot-lines took approximately the same time as fishing the ten traps, including the run between them. On several days, over 1200 pounds were captured in the traps with the best day over 2000 pounds. Several days had lifts of only a few hundred pounds, for no apparent reason, with the trots yielding practically nothing. The catch was predominately blue catfish, with very few channel catfish and white catfish mixed in. Other fish species were non-existent in our traps or on the lines. Bluecrabs continued to plague our trot-line baits and were found all the way up to Sweet Hall, which is normally fresh water but this year was as high at 10 ppt some mornings. Crabs could not reach the trap bait. In early October, an extreme rainfall event of 8 to 10 inches in one day, completely altered the river salinities to freshwater and caused extreme turbidity in our test area, and our catch fell off to nearly nothing for a period of 10 days. Prices for the catch varied widely between 45 cents per pound and 15 cents per pound, usually the latter toward the end.

CONCLUSION

Overall we were not commercially successful over the test period because of low prices. We have proven however, that this type of gear works well for catfish and is a great improvement over any form of trot-line operation. Requirements for commercial success include at least ten to twenty traps, no lost time with trot-lines, a price of at least 30 cents a pound, and an average catch of over 1200 pounds per day lifting. All rivers should be able to provide this, given the large catfish populations and their size structure, without harming the fishery. To clarify many of the unknowns of this project, it should be repeated during the spring and summer months when prices are higher and the catfish more active. This could result in increased employment and economic gain for the commonwealth as the standing resource is utilized.