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THE USE OF CHANNEL CATFISH AS SPORT FISH

By E. E. PRATHER
Agricultural Experiment Station
Auburn University
Auburn, Alabama

ABSTRACT

The channel catfish (*Ictalurus punctatus*) has proved to be a very promising sport fish in ponds. Fingerlings stocked in February 1958 in a 12.4-acre pond at the rate of 2,000 per acre in combination with fathead minnows and largemouth bass, and given supplemental feeding daily except Sunday, averaged 0.7 pounds by September. During the following periods, September 24 to December 8, and March 14 to October 6, fishermen caught per acre 1,292.5 pounds of channel catfish, 36.9 pounds of largemouth bass, and 27.0 pounds of miscellaneous sunfish. The number of fishing trips per acre averaged 579 with a catch of 2.3 pounds per trip. Fishermen harvested 62 percent of the catfish stocked.

The pond was drained November 17, 1959 and 180 channel catfish weighing 391.2 pounds, 51 largemouth bass weighing 34.5 pounds, 907 fatheads weighing 2.4 pounds, and 80.2 pounds of "wild" fish were recovered per acre.

The mortality of the channel catfish was 29 percent, which is about 20 percent higher than in ponds that are not fished.

The channel catfish reproduced very little and less than one young catfish per acre was present when the pond was drained.

At $1 per fishing permit, fishermen paid 35 cents to $2.41 per pound for the catfish they caught; the average price paid was 46 cents per pound. The costs of production for fertilizer, feed, and fingerlings was 37 cents per pound.

The income per acre from fishing was $593.37, and the income from 391.2 pounds of catfish recovered when the pond was drained was $140.83 (234.7 pounds dressed weight at 60 cents per pound). This provided a total income of $734.20. The total cost per acre for fertilizer, feed, and fingerlings was $481.46. This leaves a return of $252.74 per acre for labor and capital.

INTRODUCTION

Fishermen in various sections of the United States have for many years considered the channel catfish (*Ictalurus punctatus*) a highly desirable fish. Although generally classified as a non-game or commercial species, this fish is highly esteemed for its fighting characteristics and for its flavor. In many streams, rivers, and large impoundments, the channel catfish is often one of the most popular and most important species present. Anglers have found that this fish readily takes a wide variety of baits in many areas where game fish are less abundant.

Because of its popularity, several states including Arkansas, Oklahoma, Kansas, Missouri, Texas, and California have raised channel catfish in hatcheries and have stocked them in streams, rivers, and lakes in rather large numbers. However, a search of the literature reveals little data on the value of this species as a sport fish in ponds. Swingle summarized results obtained with this

species when stocked alone or in combination with other pondfish in Alabama, Arkansas, Oklahoma, and Texas.* When stocked alone, poor results were usually obtained, principally because of contamination with green sunfish and other native fish. Production in fertilized ponds in Alabama averaged less than 100 pounds per acre annually, growth was relatively slow, and mortality was high.

In later experiments, Swingle obtained a maximum production of 2,363 pounds harvestable channel catfish per acre annually with supplemental feeding.† In addition, annual mortality averaged less than 10 percent. Because of this very high production, tests were then conducted to determine the value of the channel catfish as a sport or game fish.

One 2.2-acre pond was stocked March 18, 1957, with 1,000 channel cafish fingerlings (2 to 3 inches) per acre. The fingerlings used in the experiments reported herein were provided by the U. S. Fish and Wildlife Service. The pond was fertilized seven times with triple superphosphate and uran at rates equal to 100 pounds 8-8-0 per acre per application. In addition, Auburn No. 1 fish feed was fed daily 6 days per week as follows:

Dates	*Pounds Fed Per Acre Per Day*	*Form of Feed Used*
April 1 - May 1	10	Dry Mix
May 2 - June 1	20	Pellets
June 3 - August 7	25	Pellets
August 8 - August 31	35	Pellets
September 3 - October 18	50	Pellets

A total of 2,236 pounds of feed per acre was used.

The pond was opened to public fishing daily except Sundays beginning September 17, at which time the catfish averaged approximately 1.0 pound each. The charge for fishing permits was $1 each with a limit of three catfish per permit. Fishing success was poor and few fishermen were able to catch their limits. Therefore, fishing pressure was light and only 64 people per acre fished the pond between September 17 and October 14.

The average catch per fisherman was 1.25 catfish averaging 1.0 pound each. This amounted to 0.3 pound of fish per hour of fishing. However, 65 percent of the total number caught were harvested the first day of fishing. Thereafter, fishing success declined rapidly and few people would fish the pond. Only 38 percent of those fishing caught fish. The pond was drained December 15, and 868 channel catfish weighing 882.3 pounds were recovered per acre. Although catfish survival was 95 percent, fishermen removed only 80 fish weighing 79.2 pounds per acre, or about 8 perecent of the number stocked. These data indicated that better fishing could be obtained by stocking more than 1,000 channel catfish per acre.

Another pond, 12.4 acres in area, was stocked per acre with 2,000 channel catfish fingerlings (3 inches) on February 27, 1958, and with 1,000 adult fathead minnows (*Pimephales promelas*) on April 28. It was also stocked with 66 largemouth bass fingerlings (*Micropterus salmoides*) per acre on June 7 to 26, 1958, when green sunfish were found to be present. The pond received four applications of fertilizer (equal to 100 pounds of 8-8-0 per acre per application) and two half applications during the year. In addition, Auburn No. 2 fish feed in pelleted form was added daily except Sundays at the rates per acre as given in Table I. For each acre, 5,423.9 pounds of feed costing $311.46 was used during the period April 1, 1958, and October 3, 1959.

The pond was opened to public fishing on September 24, at which time the catfish averaged 0.7 pound each. Permits cost $1 and the limits were 3 catfish and 3 bass per permit. The pond was open to fishing daily except Sundays until December 8, at which time fishing had practically ceased because of cold weather. It then remained closed to fishing until the following March 14. It

* Swingle, H. S. Some recent developments in pond management. Trans. N. A. Wildlife Conf., 14:295-312. 1949.

† Swingle, H. S. Experiments on growing fingerling channel catfish to marketable size in ponds. Proc. Ann. Conf. S. E. Game and Fish Comm., 12:63-72. 1958.

was restocked with 100 bass per acre May 14, and was then kept open to fishing until October 6. During this latter period, the limits were 5 catfish plus 3 bass per permit. If fishermen caught over the limit, they paid 20 cents for each additional fish. Boats were available for $1 extra.

TABLE I

SCHEDULE OF SUPPLEMENTAL FEEDING WITH AUBURN NO. 2 PELLETS *

Year	*Period*	*Pounds Per Acre Per Day*
1958	April 1 - May 1	5.0
	May 2 - July 24	10.0
	July 25 - August 25	20.0
	August 26 - October 1	25.0
	October 2 - October 7	8.0
	October 20 - December 4	12.9
1959	March 5 - April 31	15.0
	May 1 - August 15	16.1
	August 24 - October 3	16.1

* This feed consists of 35 percent soybean oil meal, 35 percent ground peanut cake, 15 percent fish meal, and 15 percent distillers dried solubles.

The catch per acre is given by months in Table II. Fishing was very good and for about 6 weeks the average catch was almost three catfish per fishing trip. The catch declined with colder weather during the fall.

TABLE II

NUMBER OF FISHERMEN AND CATCH PER ACRE

Date	*No. of Fishermen*	*Channel Catfish No.*	*Channel Catfish Pounds*	*Bass No.*	*Bass Pounds*	*Miscellaneous Pounds*	*Total Pounds*
1958							
September	38	94	73.1	36.0	18.1	0.2	91.4
October	38	86	68.9	2.0	1.6	0.5	71.0
November	16	28	25.0	0.1	0.1	0.5	25.6
December	2	4	4.0	0.0	0.0	0.0	4.0
1959							
March	12	15	15.1	0.3	0.2	1.5	16.8
April	46	114	121.1	0.0	0.0	10.6	131.7
May	240	668	695.6	0.1	0.1	4.4	700.1
June	122	200	231.6	0.0	0.0	0.9	232.5
July	19	15	23.5	3.0	0.4	1.6	25.5
August	21	13	23.0	9.8	3.2	2.0	28.2
September	20	3	8.3	20.3	10.0	4.2	22.5
October	5	1	3.3	6.4	3.2	0.6	7.1
Totals	579	1,241	1,292.5	78.0	36.9	27.0	1,356.4

Fishing success was poor when the pond was reopened in March. However, it became progressively better as the weather warmed during April. The catch per unit effort was higher and fishing pressure was greater during May than at any other time. A total of 54 percent of the entire catch was made during this month. Fishing continued to be good during the first half of June, but the catch declined during the latter part of the month and continued poor until the pond was closed October 6.

From each acre, 579 fishermen caught 1,241 channel catfish weighing 1,292.5 pounds. In addition, there were 36.9 pounds of bass, and 27.0 pounds of miscellaneous fish caught, totaling 1,356.4 pounds per acre. Fishermen harvested 62 percent of the catfish stocked. Since the average catch from fertilized bass-bluegill ponds is approximately 150 pounds per acre annually, the catch from this channel catfish pond was about eight times as great.

The catfish caught per fishing trip, pounds caught per hour of fishing, and price paid per pound of channel catfish, are given in Table III. The poundage caught per fisherman trip varied from a low of 0.42 pound in September, 1959, to a high of 2.90 pounds during May, 1959. The catch per hour was also lowest and highest during these same months. The price paid per pound varied from a low of 35 cents in May, to a high of $2.41 per pound in September, 1959. The average price paid was 46 cents per pound for all the channel catfish caught. The cost of producing these fish was 37 cents per pound for fertilizer, feed, and fingerlings for stocking (at 8 cents each).

TABLE III

CHANNEL CATFISH FISHING STATISTICS

Date	*Fish Caught Per Trip* *Number*	*Pounds*	*Pounds Caught Per Hour*	*Permit Price Per Pound*
1958				
September	2.5	1.92	0.52	$0.52
October	2.3	1.81	0.35	0.55
November	1.8	1.56	0.27	0.64
December	2.0	2.00	0.40	0.50
1959				
March	1.3	1.26	0.32	0.79
April	2.5	2.63	0.53	0.38
May	2.8	2.90	0.58	0.35
June	1.6	1.90	0.34	0.53
July	0.8	1.24	0.24	0.81
August	0.6	1.10	0.24	0.91
September	0.2	0.42	0.08	2.41
October	0.2	0.67	0.13	1.52

The pond was drained November 17, 1959 and the numbers and weights of fish recovered per acre are given in Table IV. The number of channel catfish remaining in the pond at draining time was 180 per acre, which is 9 percent of the total number stocked. Since fishermen harvested 62 percent of the number stocked, a total of 71 percent of the catfish stocked were accounted for. Although the channel catfish reproduced, less than one young catfish per acre was present when the pond was drained. The average annual mortality of channel catfish in unfished ponds here on the experiment station has been approximately 5 percent. Thus it appears that the mortality of the catfish was about 20 percent higher than in ponds not open to fishing. It is believed that a large portion of these catfish died after being caught and then returned to the pond by fishermen as they caught larger fish.

TABLE IV

NUMBER AND WEIGHT OF FISH RECOVERED PER ACRE WHEN POND WAS DRAINED NOVEMBER 17, 1959

Species	*Number*	*Pounds*
Channel Catfish	180	391.2
Largemouth Bass	51	34.5
Fatheads	907	2.4
Bluegills	20,918	58.1
Green Sunfish	1,862	18.4
Gambusia, Golden Shiners, Goldfish, and Bullheads	79	3.7
TOTAL PER ACRE		508.3

The income per acre from fishing permits was $593.37. The income from the sale of 391.2 pounds of catfish per acre recovered when the pond was drained was $140.83 (234.7 pounds dressed weight at 60 cents per pound). This provided a total income of $734.20. The total cost per acre for fertilizer, feed, and fingerlings was $481.46, leaving a return of $252.74 per acre for labor and capital.

Because of its very high production as a result of supplemental feeding, its popularity among fishermen, and catch per unit effort, the channel catfish should be ranked as a most promising species for use as a sport fish in ponds. Research now in progress at the Agricultural Experiment Station of the Alabama Polytechnic Institute should provide needed data on the most desirable stocking and feeding rates, understocking or restocking, the use of other combinations of species, and related problems.

INFORMATION AND EDUCATION

NEEDED—FEDERAL AID TO PUBLIC RELATIONS

By GUS ALBRIGHT
News Editor, Arkansas Game and Fish Department

Perhaps I should first explain the title of this discussion—"Needed, Federal-Aid To Public Relations."

I am not thinking in terms of legislation and/or federal formulas, such as are called for by the Pittman-Robertson and Dingell-Johnson Acts. Rather, it is my hope to focus a share of attention on what I believe to be a shortcoming of the programs we already have working for us.

This shortcoming, as I see it, evolves around the one basic ingredient so vital to game and fish administrators today, if they are to "win friends and influence people." That ingredient is *Public Information.*

Acknowledging that factual information is the prime requisite to good public relations and since this particular discussion has to do with the participation (or lack of it) by our federal friends, my subject might be more bluntly termed, "The Fish and Wildlife Service Needs To Release More Information."

Now I'm aware that mine is not the first approach to this subject and I recall, as you do, that two years ago Mr. Ross Leffler, Assistant Secretary of the Interior for Fish and Wildlife, on another occasion, met this challenge by acknowledging the Service's shortcomings in the field of Information and Education and announcing that, "in the future, greater emphasis will be placed on this phase of the program."

It is not my intention to reflect that our State programs have reached the ultimate in I & E programming. Far from it. Most of us on the State level still have a lot of "selling" before our administrators accept Information and Education as influencing factors in game and fish management. However, I sincerely believe we are farther along in this respect than our big federal brothers.

And right here I would like to point out that this business of keeping the public informed should be a partnership approach. If information services have a place in the professional management of game and fish resources, then surely these services should be favored the same attention in federal programming as on the State level. Why draw the line? After all, we are dealing with the same people and our objectives are the same.

But it appears that a line has been drawn. And although top-level federal policy making must bear the large share of responsibility for these informational shortages, the principal loss to those of us working with State programs lies within the realm of regional authority.

There has been noticeable improvement from the Washington headquarters, but apparently the arms of policy-making haven't reached to the regional level—and that's where we need it most.

We must tell the folks what's going on. I say "must"—at least, we'd better if we expect to gain ground in behalf of river basin objectives, migratory waterfowl needs, anti-drainage support and realistic approaches to growing insecticide and pesticide problems.

Here are a few Arkansas examples to explain more clearly what I mean.

Early in 1957, information from a private source revealed that the General Service Administration was in the process of disposing to private bidders a 4,000 acre Arkansas river island, known as Holla Bend.