

SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

HERITAGE PARK POND

2023

State: Oklahoma

Project Title: Heritage Park Pond Fish Management Report

Period Covered: January 1 - December 31, 2023

Prepared by: OFRL

Date Prepared: January 2024

ABSTRACT

Heritage Park Pond was surveyed by the Oklahoma Department of Wildlife Conservation (ODWC) in 2023 by spring electrofishing, hoop nets, and trap nets to collect baseline data of the fish populations as well as evaluate fish stocking success. Fish species sampled included Largemouth Bass, White Crappie, Hybrid Bluegill, Longear Sunfish, Channel Catfish, Black Bullhead, Common Carp, Smallmouth Buffalo, Spotted Gar and Gizzard Shad. The pond is part of the agency's Close to Home Fishing Program (CTHFP). Current regulations include a 3 fish limit per person for sunfish species and Channel Catfish. There are no size limits in effect. All other species fall under regular statewide limits. A roving creel survey of anglers revealed high harvest which is acceptable for a put-and-take fishery. Recommendations include the installation of an aeration system to help improve water quality, add cedar tree brush piles to provide nursery cover, and to continue monitoring the fishery every 4 years. An annual fishing event for families should be held by the City of Harrah.

INTRODUCTION

Physical description

The pond is owned by the City of Harrah and is three acres in size. The maximum pond depth is approximately 6 feet. Total shoreline length covers 1/3 of a mile. Park features include a fountain, amphitheater, enclosed picnic shelter, park benches, walking trail and a water park. Heritage Park pond is located at 1734 N. Church Avenue in Harrah, Oklahoma.



History - The pond was reclaimed from a sewage treatment pond by the City of Harrah in 1985. A Memorandum of Understanding (MOU) between the ODWC and the City of Harrah to provide quality fishing was signed in 2004. The MOU was renewed in 2018. This CTHFP partnership has worked well with Harrah maintaining the park and ODWC managing the pond.

Fish introductions - Hybrid bluegill have been stocked off and on since 2004. The previous strategy for all Close to Home Fishing ponds in the beginning was to create put-grow-take fisheries. Fingerling Channel Catfish and Hybrid Bluegill produced by ODWC Hatcheries were stocked annually. Growth by both species was slow. Most anglers wanted keeper sized fish. As a result, a request was made to the Hatchery Section to begin producing 6-inch sunfish and 12-

inch catfish. Due to pond space limitations and feed costs, only Hybrid Bluegill were attainable. Channel Catfish are now purchased from outside vendors averaging 18 inches in size. More regular introductions have occurred since 2013. See Appendix 1.

Habitat - Several artificial fish attractors (spider blocks) are scattered throughout the pond. See Appendix 3. These structures are relatively inexpensive to make. Local sportsman and Boy Scouts have assisted with the construction and placement of spider blocks at many OKC area CTHFP sites. Plans for adding additional structure for fish habitat are in the works. Mini Shelbyville cubes, spider blocks and cedar trees are being considered.

Surveys - Heritage Park Pond has been sampled by electrofishing boat two times over the years. All other sampling took place in 2023. An angler creel survey was conducted throughout the summer in 2023 to determine fishing pressure as well as harvest. Findings are listed in Appendix 2.

RESULTS

Largemouth Bass

Largemouth Bass numbers at Heritage were low in 2023. The pond is managed as a put and take fishery. Catchable sized Hybrid Bluegill and Channel Catfish are stocked throughout the Spring and Summer. Largemouth Bass are incidental to the pond's fishery. Bass numbers are dependent on adequate habitat of which there is none. Condition of bass sampled was good with an overall Wr of 96 (Figure 2). The largest bass weighed 2.4 pounds. A circuit around the pond covered 2 units (20 minutes) and produced the results in the tables and figures below.

Table 1. Total number (N), catch per unit effort (CPUE), relative weights (Wr) and CPUE by size group for Largemouth Bass during Spring electrofishing at Heritage Park Pond in 2023.

		Total CPUE	Substock ≤ 8 in	Stock 8in		Quality 12 in		Preferred 15 in		Memorable 20 in		Trophy 25	
Year	No.	CPUE	CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2023	6	18.00	9.00	3.00	91	0.00	-	6.00	99	0.00	-	0.00	-

Table 2. Proportional Size Distribution (PSD) of Largemouth bass. Quality (PSD-Q) preferred (PSD-P) and memorable (PSD-M) lengths. PSD values indicate the proportion of fish in or above the quality, preferred or memorable size classes.

Year Surveyed	PSD-Q (12 in)	PSD-P (15 in)	PSD-M (20 in)
2023	33	67	67

HERITAGE PARK POND - 2023

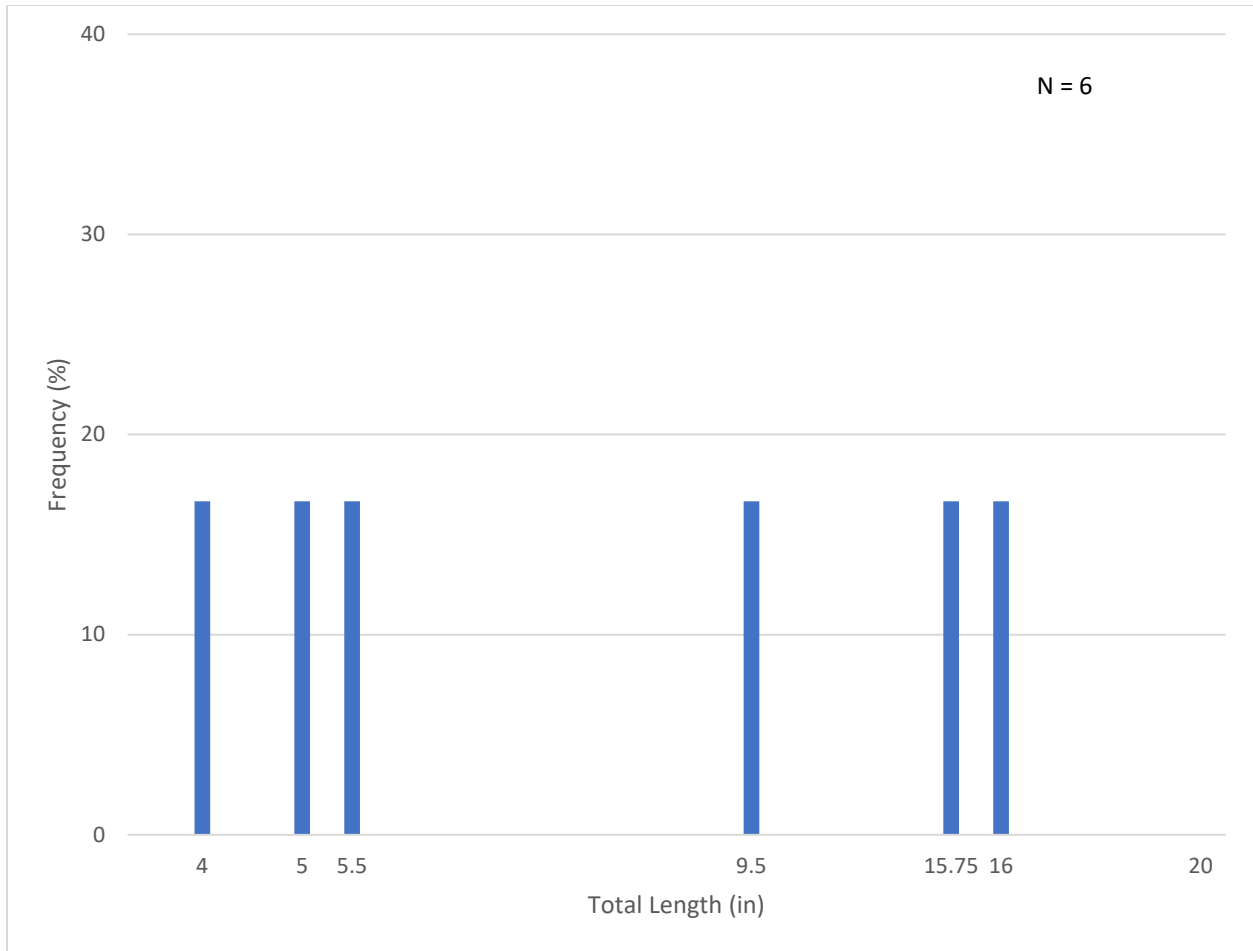


Figure 1. Largemouth Bass length frequency distribution via Spring Electrofishing

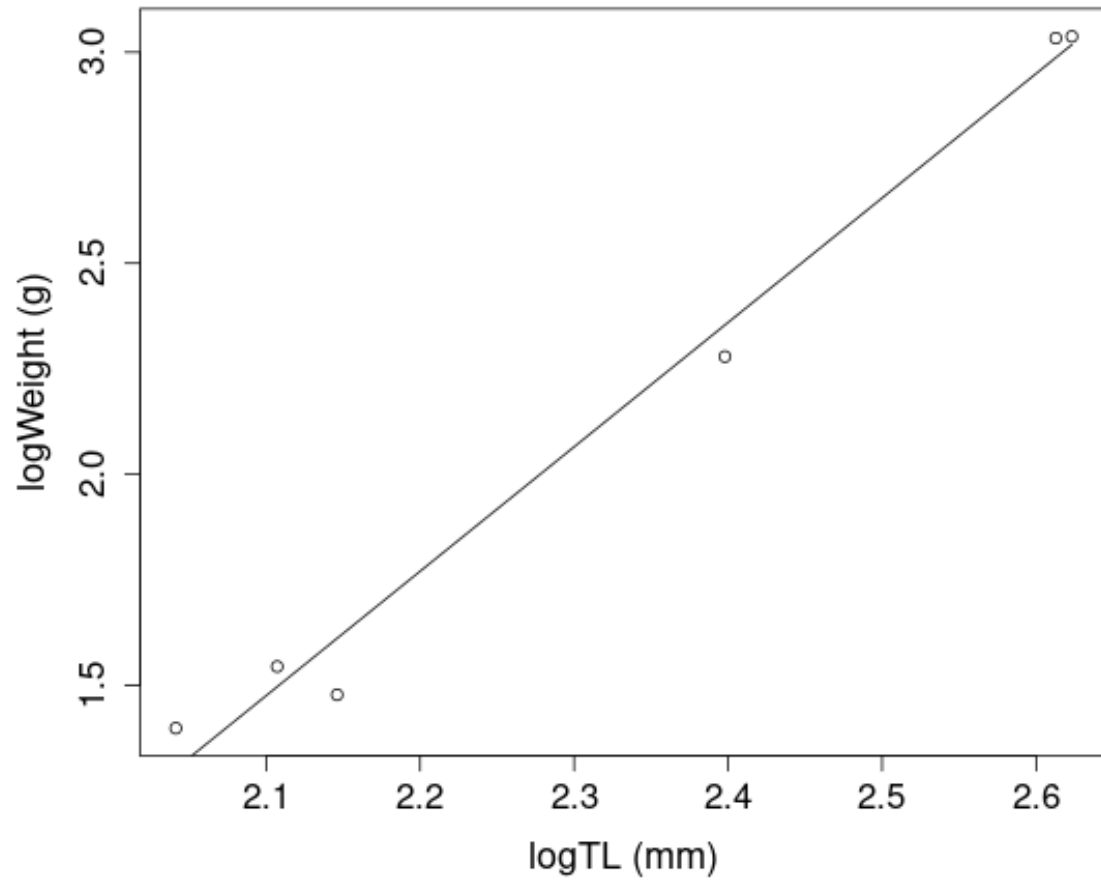


Figure 2. Largemouth Bass condition values (Wr) via Spring Electrofishing

Hybrid Bluegill Sunfish

Hybrid Bluegill numbers, as well as all other sunfish species, at Heritage Park were low in 2023. The pond is managed as a put and take fishery. Catchable sized Hybrid Bluegill are stocked throughout peak angling months. Condition of Bluegills sampled was good with values at or above 90 (Figure 4). The largest fish sampled was ½ pound in size. A circuit around the pond covered 2 units (20 minutes) and produced the results in the tables and figures below.

Table 3. Total number (N), catch per unit effort (CPUE), and relative weights (Wr) by size groups of Bluegill Sunfish collected by Spring Electrofishing from Heritage Park Pond. Acceptable Wr values are ≥ 90 .

		Total CPUE	<u>Stock</u> 3 in		<u>Quality</u> 6 - 8 in		<u>Preferred</u> 6 in		<u>Memorable</u> 10 in	<u>Trophy</u> 12 in
Year	No.	CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2023	76	228	207	-	15	121	3	100	0	0

Table 4. Proportional Size Distribution (PSD) of Bluegill Sunfish. Stock (PSD), Quality (PSD-Q) preferred (PSD-P) and memorable (PSD-M) lengths. PSD values indicate the proportion of fish in or above the quality, preferred or memorable size classes.

<u>Year Surveyed</u>	<u>Stock</u> (3 in)	<u>Preferred</u> (6 in)	<u>Quality</u> (6 - 8 in)	<u>PSD-M</u> (10 in)
2023	8	1	92	1

HERITAGE PARK POND - 2023

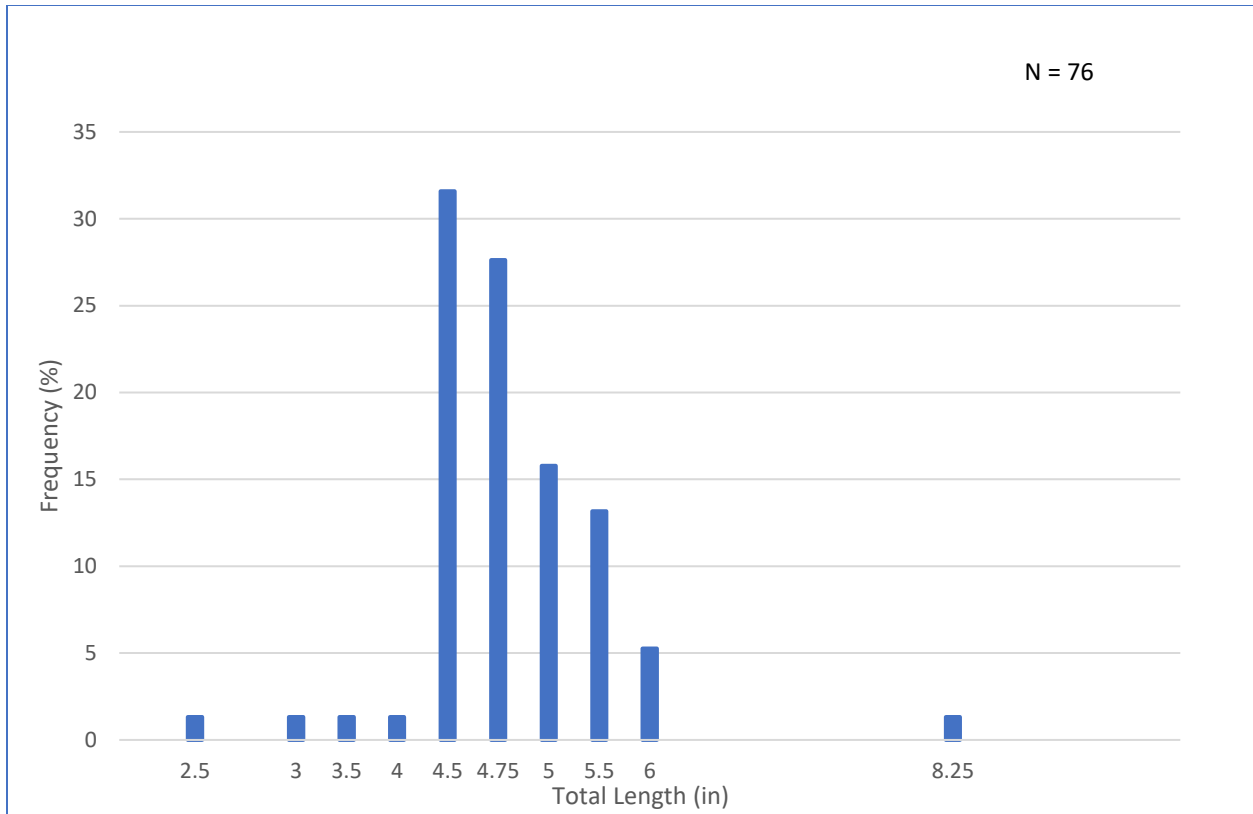


Figure 3. Hybrid Bluegill Length Frequency distribution via Spring Electrofishing

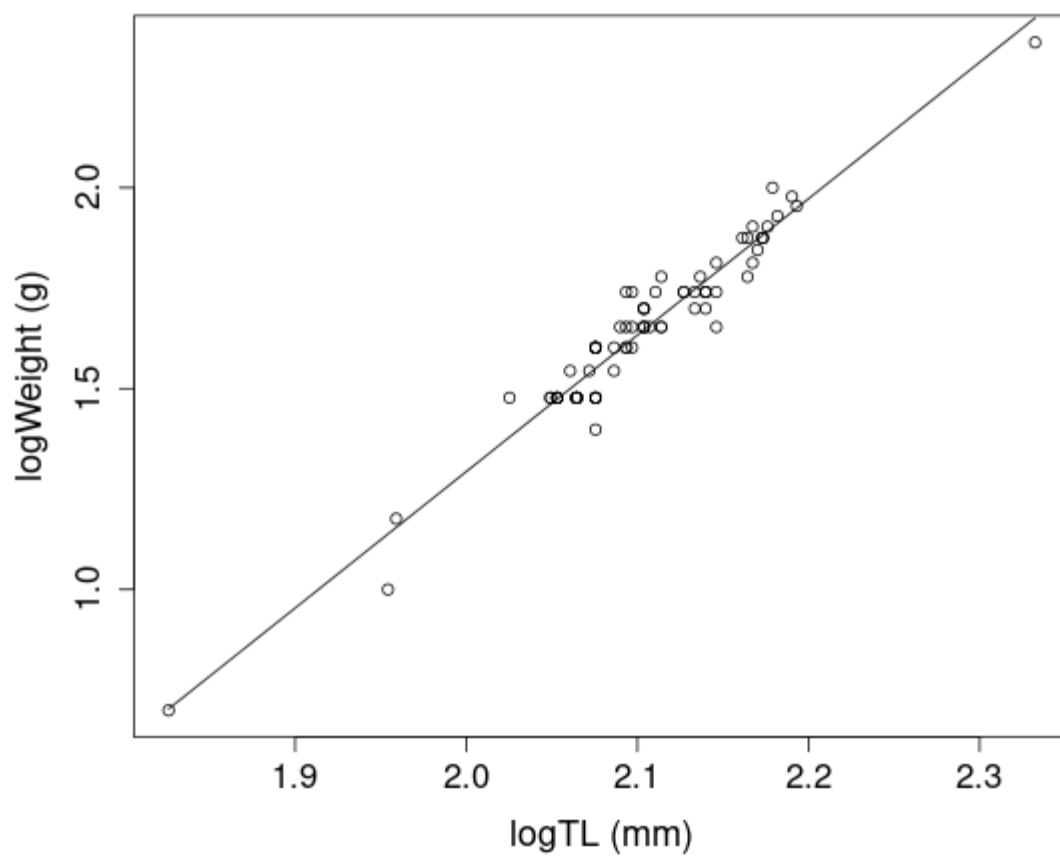


Figure 4. Hybrid Bluegill condition values (Wr) via Spring Electrofishing

Channel Catfish

Baited hoop nets collected 13 Channel Catfish over a 3-day period. The nets were baited with Sportsman's Choice floating and sinking, pelleted food. Catfish size groups ranged from 12 - 20 inches (Figure 5). Most of the fish were 13.5 -16 inches long (See Table 6). The total catch rate was 1.46. Channel Catfish in the sample were in good shape (Figure 6). Wr values above 90 are considered good. One hundred and ninety-six large catfish purchased from McBride' Wholesale Fish were stocked during the Summer (Appendix 1). These are market size fish usually going to Dallas or Oklahoma City restaurants. These fish are highly sought after by anglers and usually get caught out quickly (See Appendix 2). The stocking rate for Heritage Park Pond in 2023 was 65 fish per acre. No age data was collected in 2023.

Table 5. Total number (No.), catch per unit of effort (CPUE), and relative weights (Wr) by size groups of Channel catfish collected by hoop net from Heritage Park Pond. Acceptable Wr values are ≥ 90 .

		Total CPUE	<u>Stock</u> 11 in		<u>Quality</u> 16 in		<u>Preferred</u> 24 in		<u>Memorable</u> 28 in		<u>Trophy</u> 36 in	
<u>Year</u>	<u>No.</u>	<u>CPUE</u>	<u>CPUE</u>	<u>Wr</u>	<u>CPUE</u>	<u>Wr</u>	<u>CPUE</u>	<u>Wr</u>	<u>CPUE</u>	<u>Wr</u>	<u>CPUE</u>	<u>Wr</u>
2023	13	1.46	0.9	93.2	0.56	98.4	0.0	0.0	-	-	-	-

Table 6. Proportional Size Distribution (PSD) of Channel catfish. Quality (PSD-Q) preferred (PSD-P) and memorable (PSD-M) lengths. PSD values indicate the proportion of fish in or above the quality, preferred or memorable size classes.

<u>Year</u>	<u>PSD</u>	<u>PSD-Q</u> (16 in)	<u>PSD-P</u> (24 in)	<u>PSD-M</u> (28 in)
2023	38	62	38	0

HERITAGE PARK POND - 2023

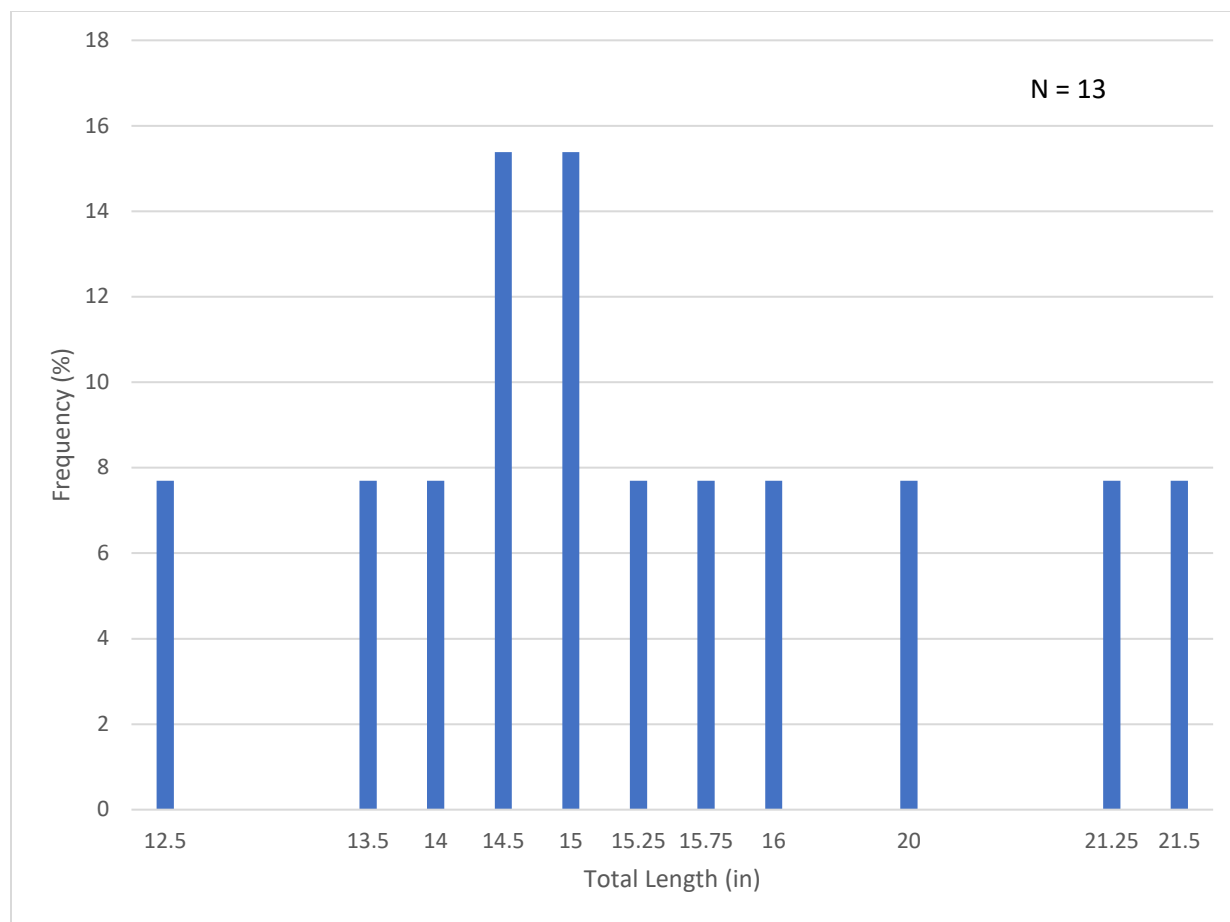


Figure 5. Channel Catfish length frequency distribution via hoop netting

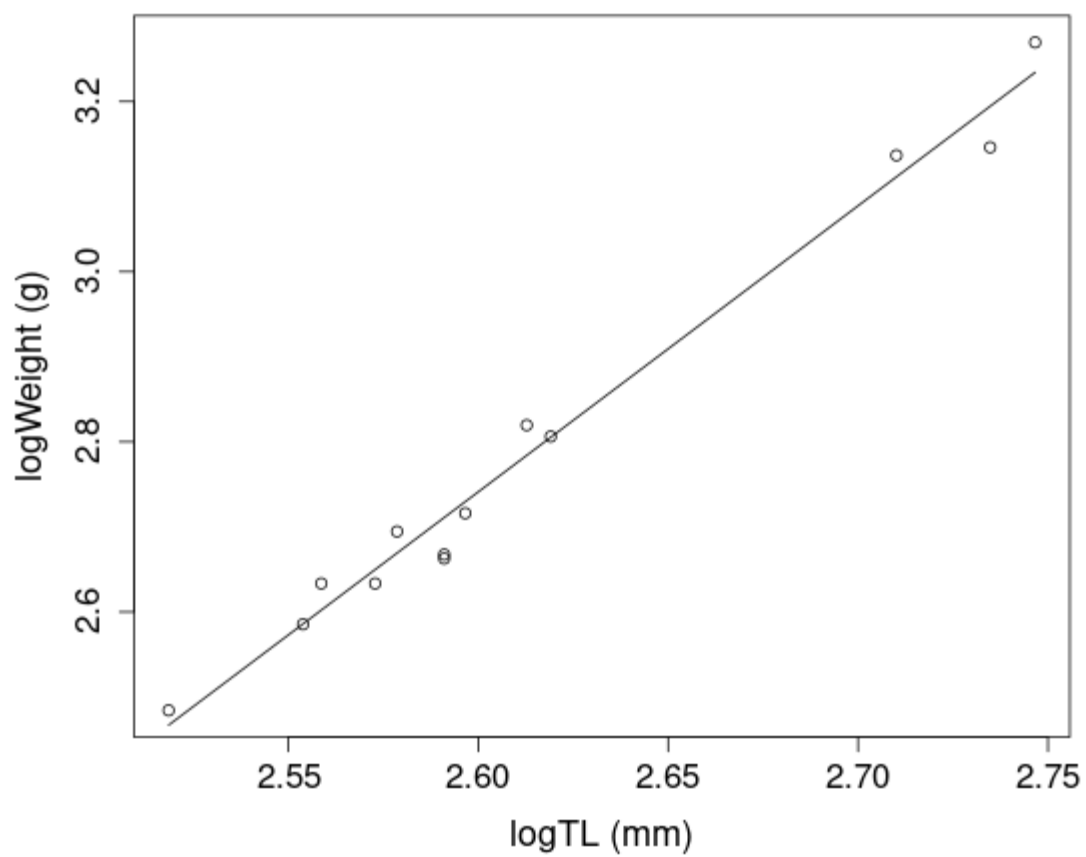


Figure 6. Channel Catfish condition values (Wr) via baited hoop nets

DISCUSSION

Catch rates for Channel catfish and Hybrid Bluegill were low due to low stocking rates and high harvest by anglers. The most effective gear type for bass and sunfish was electrofishing. Trap net was the most successful gear for collecting White Crappie at Heritage Park Pond. Most of the crappie appeared to be stunted. These fish were removed from the pond. By doing so, there should be less competition with Hybrid Bluegill. Pond management guidelines do not recommend crappie in small bodies of water due to stunting and competition with other sunfish species. They are not desirable to most anglers.

RECOMMENDATIONS

The pond would benefit greatly from a dredging or cleanout to remove sediment in several areas. The average depth is 3.5 feet. This issue was addressed at the 2018 MOU renewal meeting. Harrah officials were concerned about where and how to dispose of the spoil. By deepening the pond, the overall water volume would be increased. This would help to improve water quality and allow the pond to hold more fish. The installation of an aeration system was presented to City officials in 2023 which would help aerate the pond and help digest bottom sediment. Blue-green algae has been observed on the water surface the last couple of years. Excess nutrient levels (phosphorus and nitrogen) in the pond are more likely the reason. The addition of brush piles and spawning shoals (rock piles) would help with spawning and recruitment of sunfish species. Many anglers during the creel survey requested the installation of a dock or boardwalk. The addition of rip-rap rock along the west shoreline would reduce sloughing thereby lessening turbidity. An annual fishing event for families should be held by the City of Harrah each Summer or Fall. Stocking rates for both Channel Catfish and Hybrid Bluegill should be increased if funds are available. The addition of a large Flathead Catfish, or two, would help reduce the stunted crappie numbers. The pond should be surveyed again by ODWC in 4 years.

Appendix 1 – Stocking Reports for the past 10 years

<u>Month/Year</u>	<u>Species</u>	<u>Count</u>	<u>Weight (lbs.)</u>	<u>Size (in.)</u>
Aug-23	Channel Catfish	29	100	14-24
Jun-23	Channel Catfish	88	263	18
May-23	Hybrid Sunfish	650	90	5
Apr-23	Channel Catfish	42	126	18-22
Sep-22	Hybrid Sunfish	250	64	5-7
Jun-22	Hybrid Sunfish	350	88	6+
May-22	Hybrid Sunfish	500	119	6 3/8
Jun-21	Hybrid Sunfish	308	44	5
Sep-20	Hybrid Sunfish	400		6
Oct-18	Hybrid Sunfish	165	55	5
May-18	Hybrid Sunfish	250	50	5
Oct-17	Hybrid Sunfish	200	32	5
Aug-17	Hybrid Sunfish	200	40	5-7
Jun-17	Channel Catfish	250	250	14
May-17	Hybrid Sunfish	200	33	5
Apr-17	Channel Catfish	200	67	9
Jul-16	Channel Catfish	400	133	9
Apr-16	Channel Catfish	400	400	14
Apr-15	Channel Catfish	200	150	10
Jul-14	Channel Catfish	201	67	11
Aug-13	Hybrid Sunfish	200		4
Jun-13	Channel Catfish	249	47	9

Appendix 2. Creel survey questions and response summary

Total anglers	Total hours	\bar{x} angler hours	Survey days	Number fish caught	Number kept
212	227.33	1.56	42	149	15

Q1: Date - April 13 through August 31, 2023. Collected 100 actual interviews

Q2: Time started fishing - Hours covered dawn to dusk in 4-hour periods

Q3: Time finished fishing - Hours covered dawn to dusk in 4-hour periods

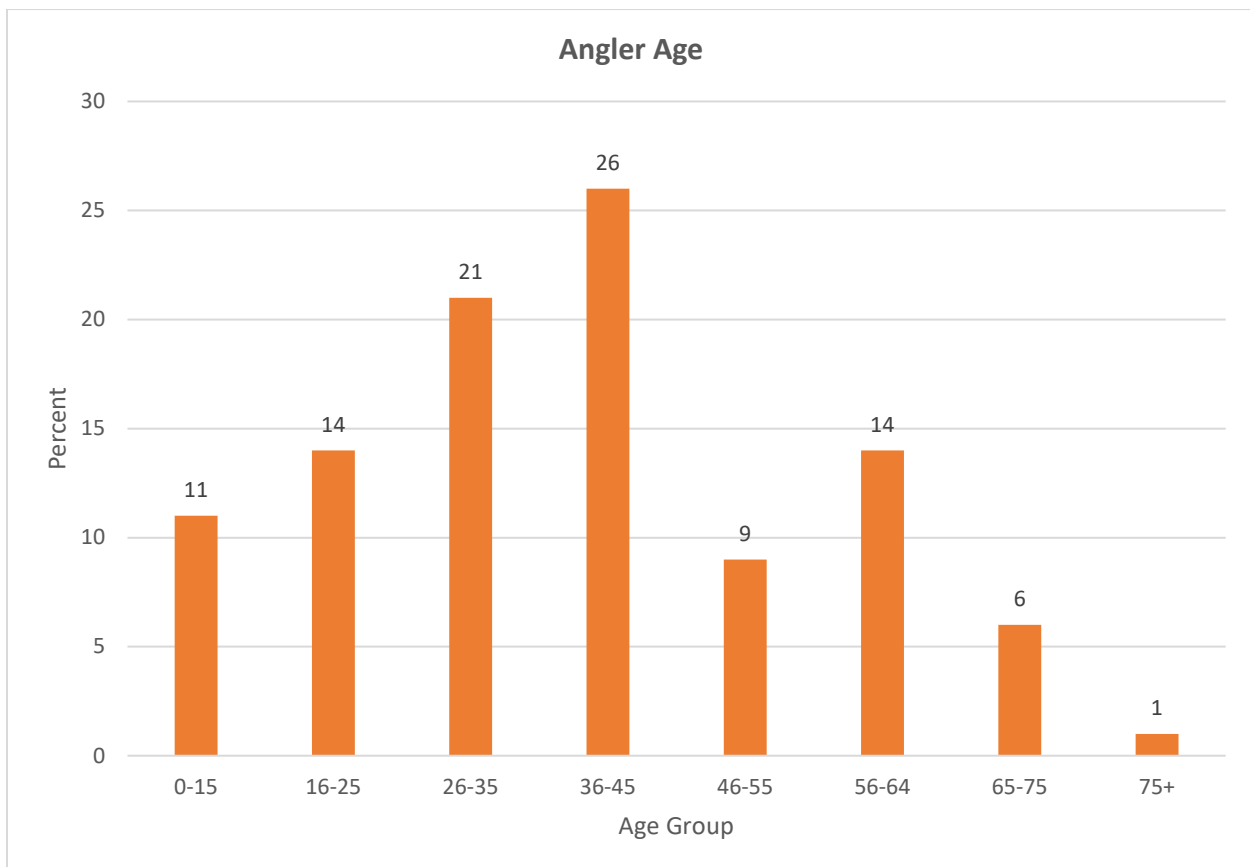
Q4: Number in fishing party - Average party size 1.8

Q5: Gender - 76 % male, 8.5 % female, 7.5 % both

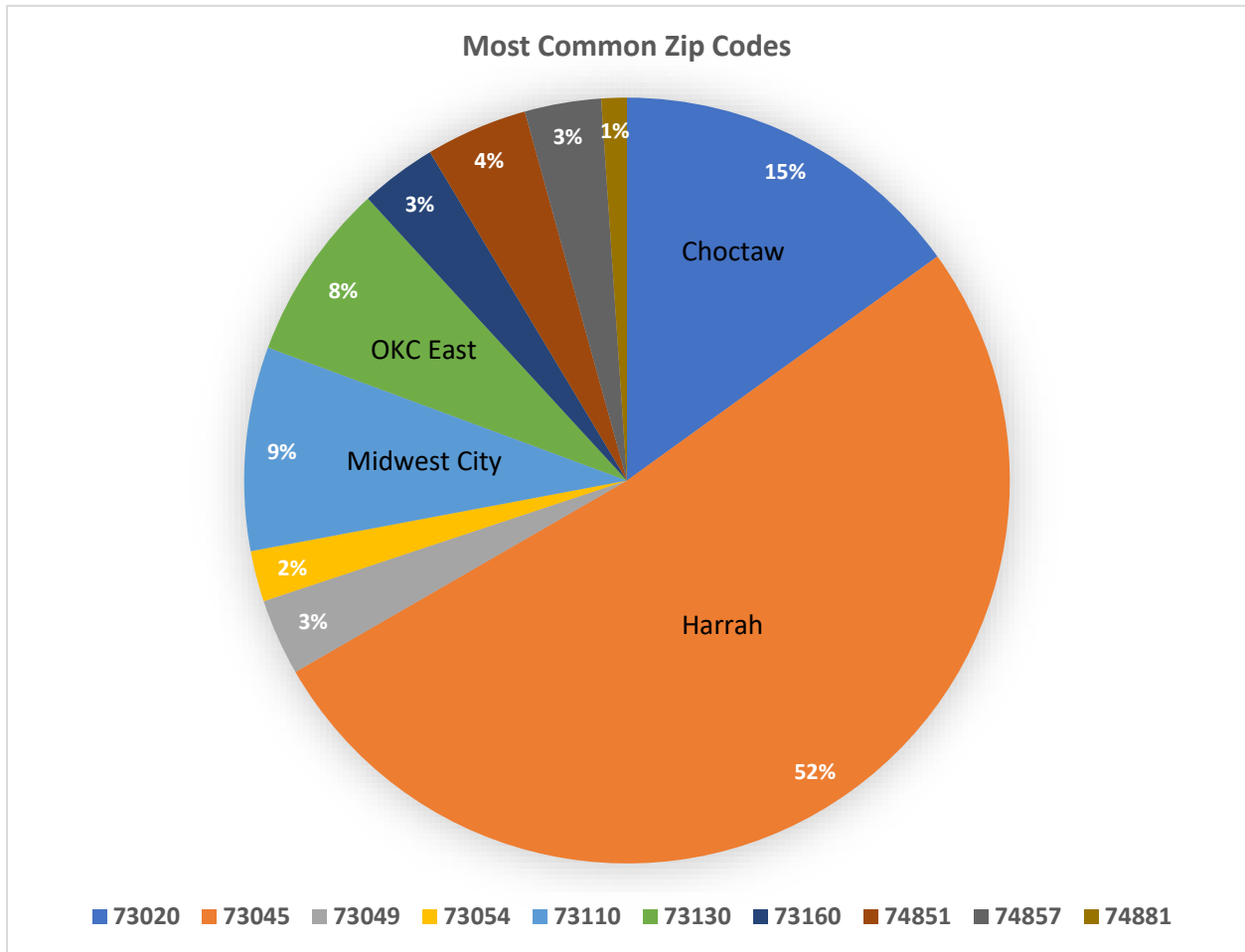
Q6: Children fishing - 56 % of parties with kids fishing

Q7: Can I ask you questions - 85 % answered "YES"

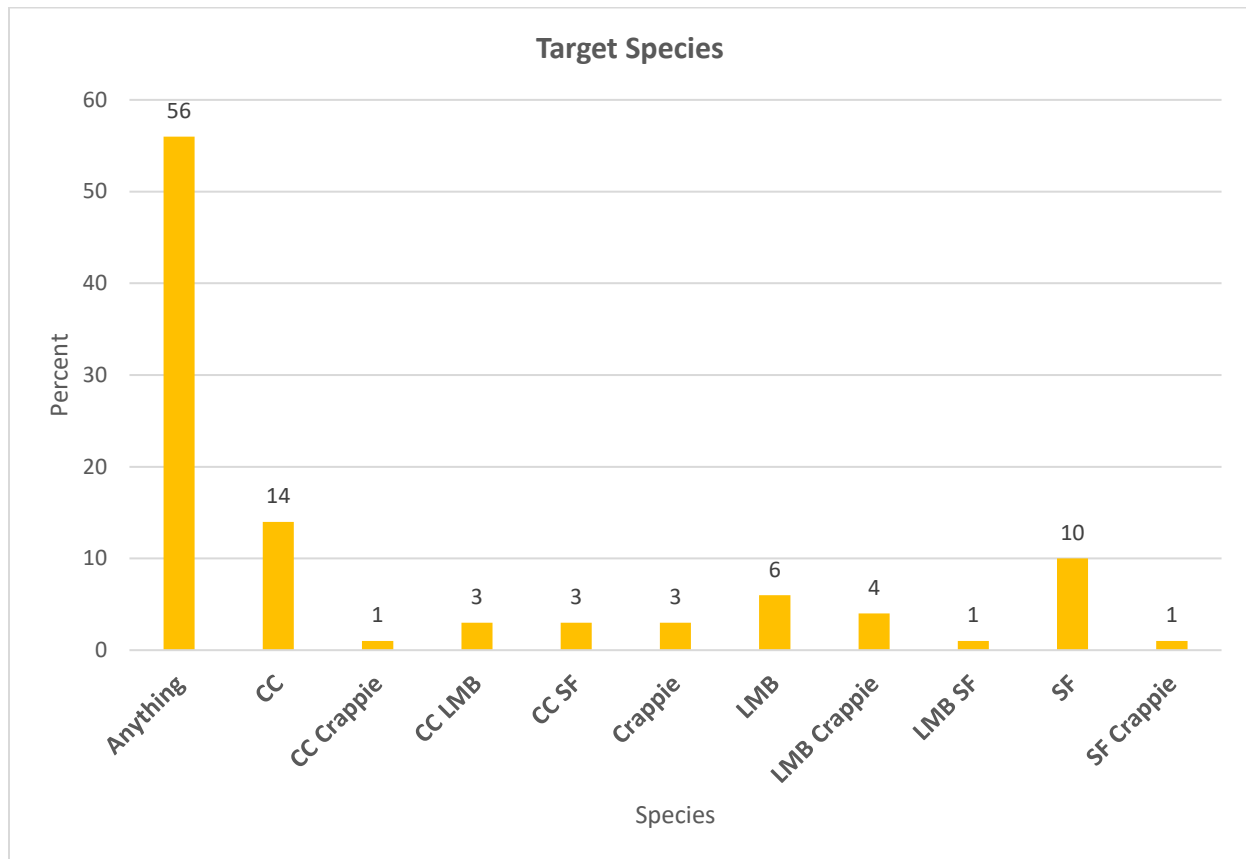
Q8: What is your age -



Q9: What is your zip code -



Q10: What are you fishing for:



Q11: Have caught anything: 44 % of anglers interviewed caught something

Q12: Disposition of caught fish:

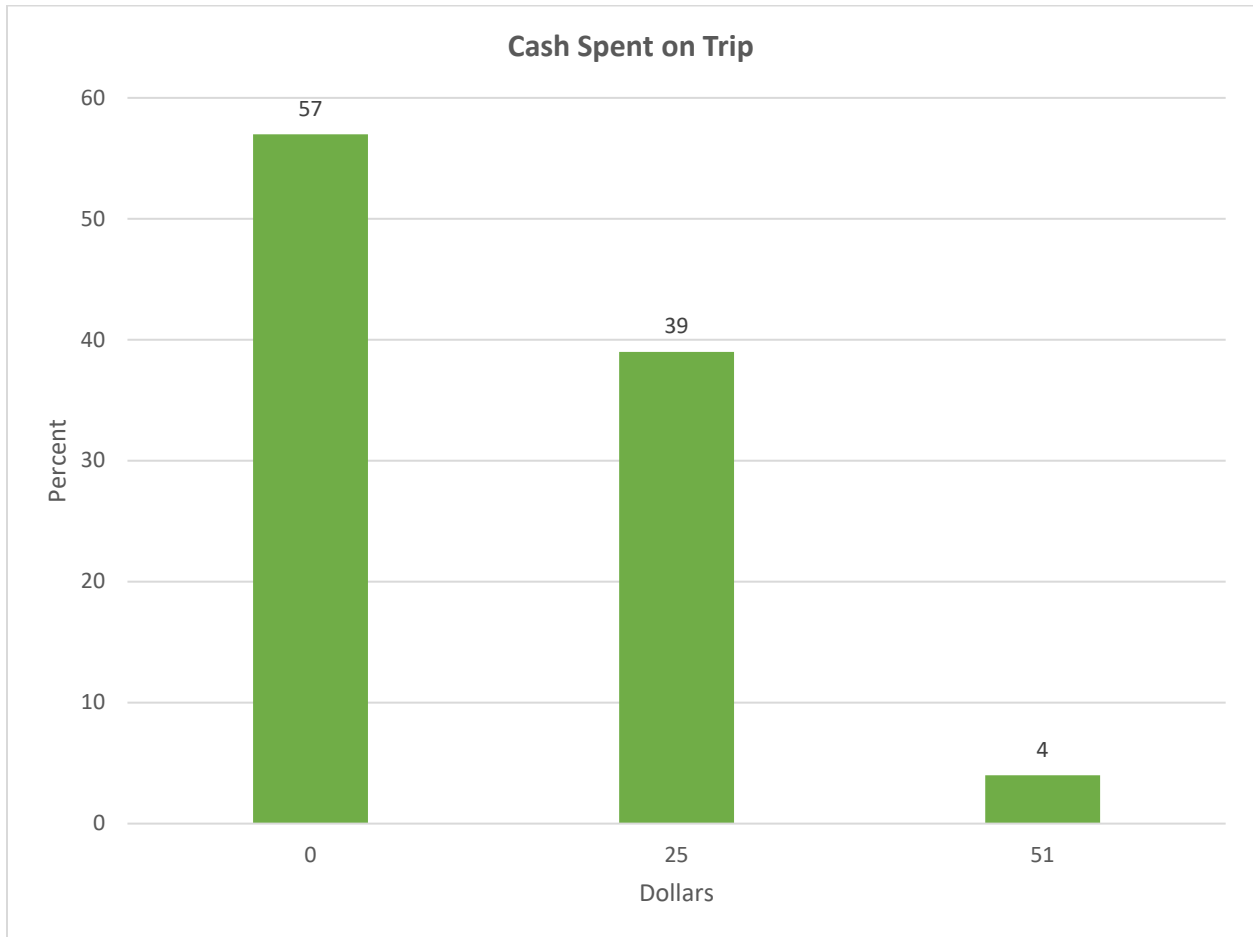
All options	Keep for bait	Eat	Release
5	5	11	81

Q13: Fish other CTHFP ponds - Fifty-seven percent said “YES”

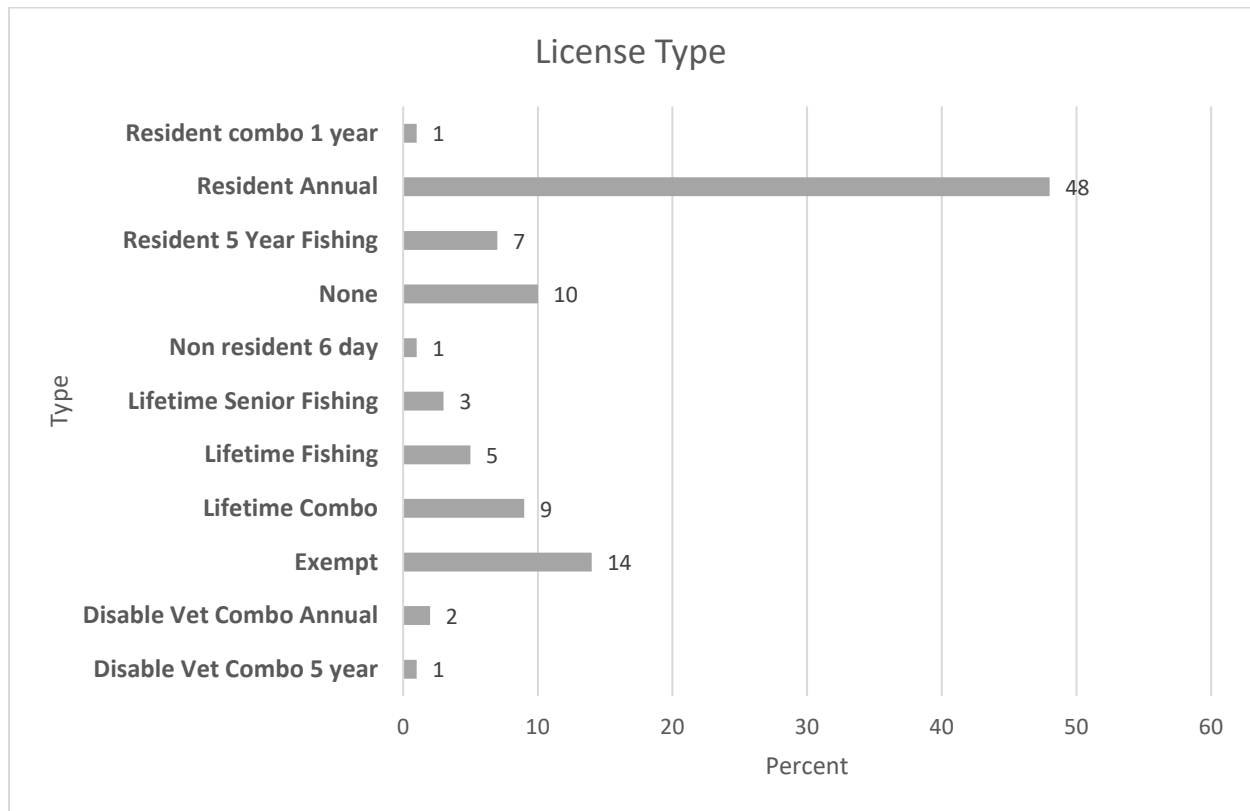
Q14: Fishing experience today - Average response rating was 3.45

Q15: Why did you give that ranking -

Q16: Did you spend any money to fish today -



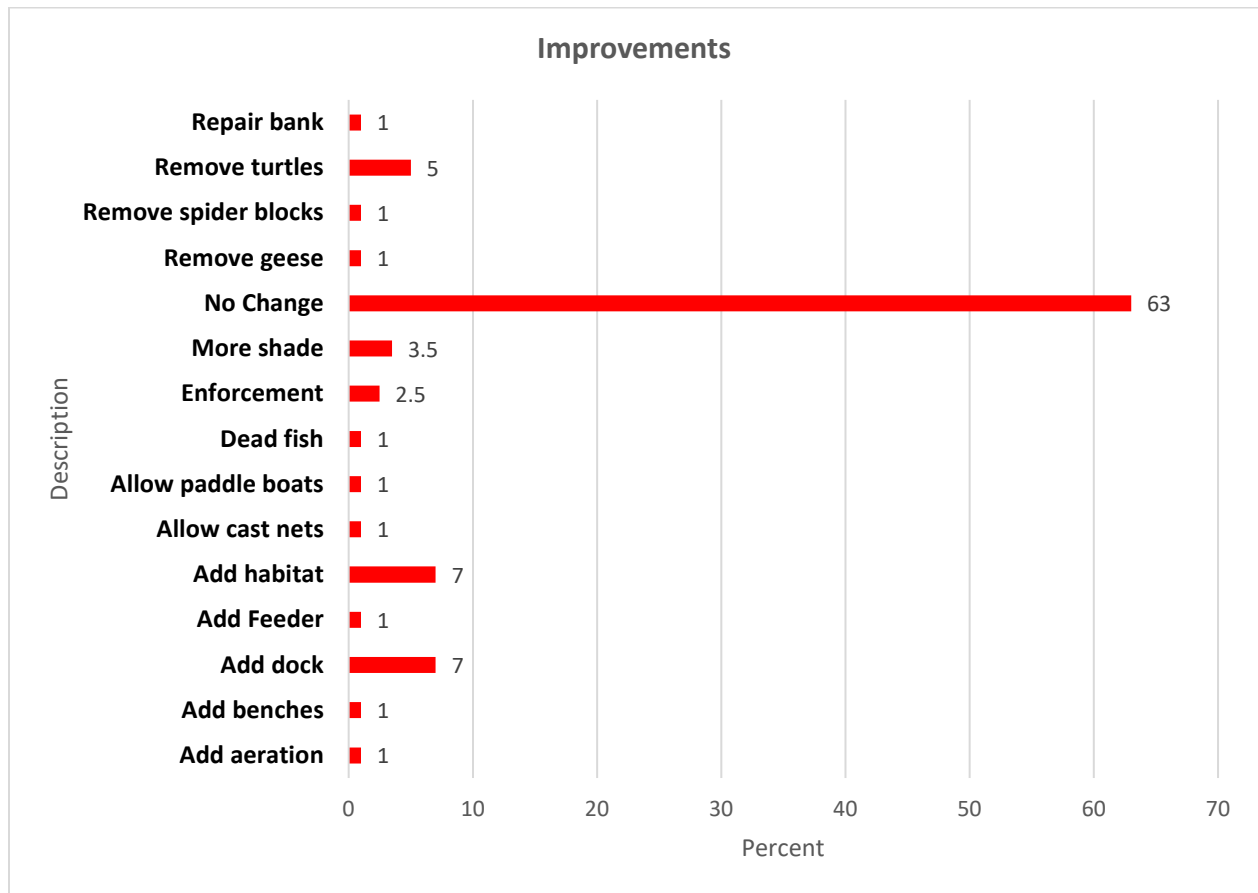
Q17: What State fishing license do you have -



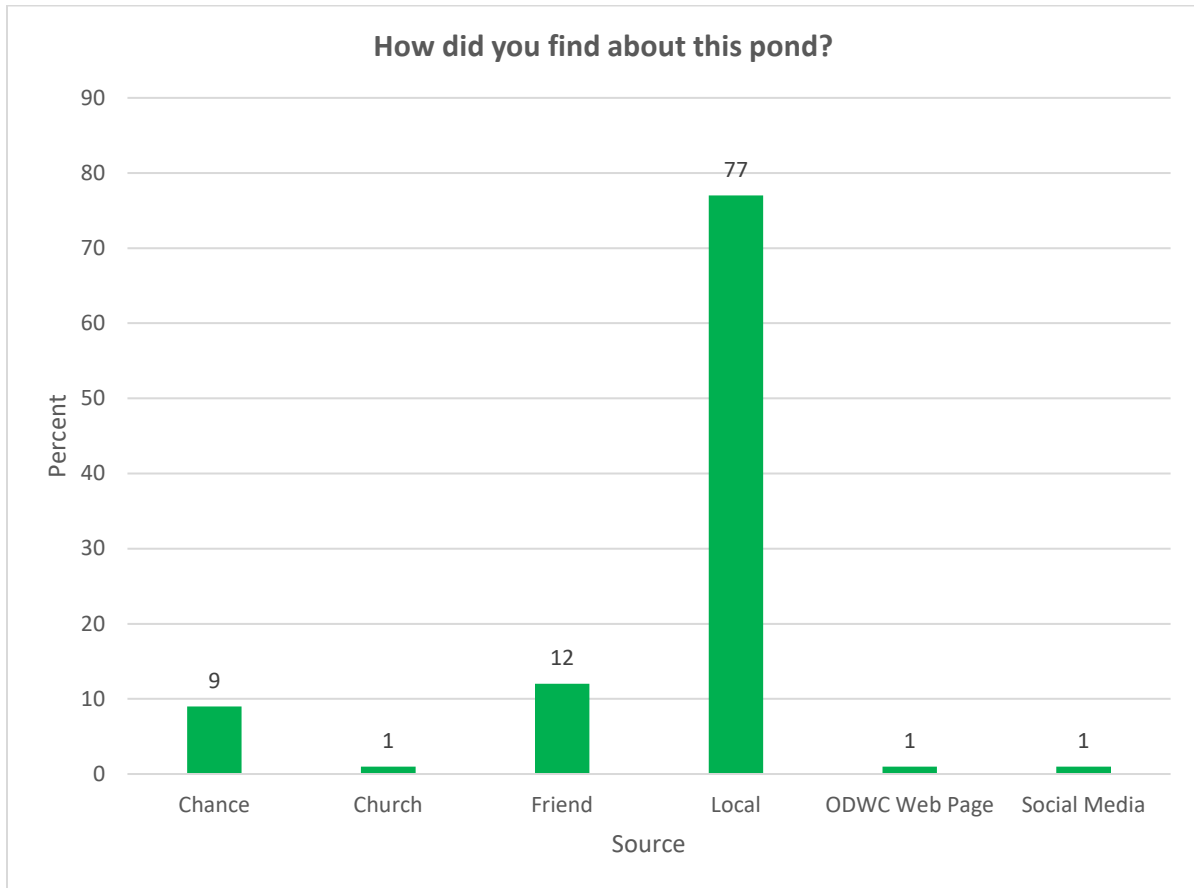
Q18: Approve of daily limit of 3 aggregate - 83 % of respondents said "YES"

Q19: In favor of allowing bass harvest at CTH ponds - 90 % of respondents said "YES"

Q20: Suggestions to make park / pond better -



Q:21: How did you find out about this pond -



Appendix 3. Fish attractor sites for Heritage Park Pond

Area Name	Site #	Description	Marked	Bank Access	Date
Panhandle	1	Spider blocks	No	Yes	2008
SE corner	2	Spider blocks	No	Yes	2008
Center	3	Spider blocks	No	Yes	2008
SW corner	4	Spider blocks	No	Yes	2008
NW corner	5	Spider blocks	No	Yes	2008

