STATE Texas
PROJECT F-4-R-2 , Job B-2
PEROID June 4, 1953 to October 31, 1955

# JOB COMPLETION REPORT

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## TITLE

Creel Census of Lake Whitney, Texas.

## OBJECTIVES

To estimate the total catch by species and to obtain data regarding the growth rate and relative abundance of each species in the catch.

## INTRODUCTION

Lake Whitney is a large, clear-water impoundment located on the Brazos River just a few miles west of Whitney, Texas. The lake is about 37 miles long at elevation 520, which is the top of the power pool. It has a shore line 190 miles long extending into the steepy sloping tributary valleys entering the reservoir. A drainage area of 17,656 square miles is controlled by Whitney Dam. At elevation 520 Whitney Reservoir contains 15,800 surface acres with a maximum depth of 95 feet. Nearly one-third of the lake area has a depth of ten feet or less which is favorable to high fisheries production, and might possibly offer future lake management by flucation of the water level. Part of the trees and brush was cleared from the land between elevations 505 and 525, but much of the timber along the original stream banks was left standing.

Whitney Dam was closed on December 10, 1951 and the lake reached its normal holding capacity of 15,800 surface acres of water April 14, 1954. Fluctuation of the lake level is shown in Figure 1. Water depth areas are shown in Table 1. High-water frequencies are shown in Table 2.

Lake Whitney is within short driving distance, 100 miles or less, of about two million people. Many fishing camps were established on the lake shore before the impoundment was completed and more than 50 modern commercial camps now dot the shoreline. There are also a large number of private cottages and two aircraft landing strips near the lake. In general, the exploitation of the recreational properties of the lake has been great. Many fishermen visited the lake as it was filling and the fishing traffic has been increasing since that time. Pleasure boat riding and water skiing are also popular during the warmer months.

## CREEL CENSUS METHODS

This paper reports the results of a 27-month creel census beginning in August of 1953 and ending the last of October 1955. Six days per month were used in working selected fishing camps on the lake. Camps located on various parts of the lake were worked to obtain a cross-section of the fish harvest which fluctuated with seasons and intensity of fishing pressure in different localities. The six creel census days used each month were selected to represent week days, week-ends, and holidays, as

well as fair and foul weather periods in order to sample all types of fishermen that would be visiting the lake and all conditions of weather involved. Table 3 is a tabulation of data from the creel census cards.

One census clerk was left at each of the camps selected to record data from all fishermen using that camp. Information taken inculded the number of each species caught, their standard length the total hours fished, type of fishing, and kind of bait used. The weight of each fish was determined later by weight-length curves obtained from a netting operation worked on the lake concurrently with the creel census. The total fish harvest was calculated by using known creel census data times the number of fishermen using the lake as recorded by automatic traffic counters operated by the Corps of Engineers. Spot checks determined the percentage of visitors that were actually fishing the lake during each season of the year. Excellent cooperation was received from the Corps of Engineers in their constant efforts to make the data obtained from the traffic counters as accurate as possible. Table 4 presents monthly data of the more important species as shown by the creel census cards.

The need for more factual knowledge of the fish harvest from our larger lakes has been recognized for a long time. Intelligent fisheries management can hardly be attained without a better understanding of what our lakes are producing under the present conditions. It is difficult to obtain a complete picture of the harvest from any of our impoundments, but any data that sheds light upon a lake in regard to its capacity to produce fish should be some help in managing the fish population of that lake. Considerable attention is given in this report to the monthly variation of the sizes of some of the species caught and the seasons of the year when the largest harvests were made. Consideration is also given to the production, in both pounds and number, of each species per surface acre and whether or not the population of some of the species are stable. The effort expended by the angler in harvesting his catch and the method of fishing and types of bait used to creel the fish has also been given some thought. It is hoped that such information may be useful in future management practices.

LARGEMOUTH BASS

There is no doubt that the largemouth bass is very popular and would hold first place in many discussions among anglers. The largemouth bass was quite important in the lake harvest as it yielded the largest return in pounds per surface acre of any fish caught. The angler who is interested primarily in catching bass is the fisherman you generally hear from when the discussion gets around to lake management, although he represents only a small percentage of all the fishermen.

A brief review of the angler's history of Lake Whitney, previous to the present study, relates that practically all of the 170,000 bass that were stocked in June 1950 and May and June of 1951 were caught when the lake level was drawn down during the fall of 1952. Some of the fishermen at that time voiced their opinion that the future bass fishing had been seriously damaged. Bass fishing was poor as the lake area began to expand again and remained so until the fall of 1953. At that time the bass began to school and were caught in large numbers. Bass fishing was at its best from October through February of each year and poor during the late spring and summer months. More bass were caught during July and August of 1955 than during the same months of 1954. High water during 1955 enticed the bass to feed in the shallow areas over recently flooded land where it was easy for the fishermen to contact them.

Figure 2 shows the percentage of the entire harvest by months as represented

by both Kentucky and largemouth bass. The two species are considered as one type of fish on this chart for simplicity of comparing the bass catch with the other two important groups of fish. Most of the bass fishing was done during the day but many bass were also caught at night as the anglers fished for crappie. Figure 3 shows the largemouth bass harvest in standard-length groups and the percentage of the total largemouth bass catch that each group represents. If one should wish to visualize the bass in total-length groups he can derive a close estimate by adding 1 or 1½ inches to the two smaller size groups and 1 3/4 to 2¼ inches to the four larger size groups. Reference is given to Figure 4 for a summary of the largemouth bass harvest as represented by various size groups.

The 9 inch bass was the size most frequently caught, but by only a very small margin. This size accounted for 19.93 percent of the harvest. The 8 inch and 10 inch sizes each furnished almost as many bass as the 9 inch groups. The three sizes, when considered as one group, furnished 58.71 percent of all largemouth bass caught. The angler would probably be more interested in the total-length measurement and the weight of the individuals in this size group. The 8 inch group weighed 8 ounces and measured 9½ inches in total length. The 10 inch group weighed 15 ounces and measured 12 inches in total length. It is believed that most of the bass up to the 15 ounce size are harvested when they are one year old or younger. The 6 to 8 inch sizes are grouped together and represent 32.48 percent of the harvest. If the three sizes in this group were presented individually it would be seen that the 8 inches composed roughly two-thirds and the 7 inchers one-third of the fish in that group with the 6 inch size accounting for only a few fish. In the 12 to 13 inch group about two-thirds were 12 inches long and one-third were 13 inches long. In the 14 to 19 inch group a little over one-half measured 14 inches, one-fourth were 16 inches, one-eight 17 inches long with the 18 and 19 inch sizes accounting for the remaining one-eight. Figure 5 shows the mean standard-length of largemouth bass caught during each month of creel census.

Lake Whitney has been a popular lake for bass fishermen and has yielded a good harvest of fish. Anglers took 1,875,000 largemouth bass weighing 1,706,000 pounds from Lake Whitney in 27 months. The average weight was 0.91 pounds per bass. This species accounted for 20.90 percent by number and 34.83 percent by weight of all fish creeled. The harvest per surface acre was 130 bass weighing 118 pounds.

KENTUCKY SPOTTED BASS

The Kentucky spotted bass is the fish that is often reported as the smallmouth bass by the fishermen. The Kentucky spotted bass is not as abundant as the largemouth bass and accounted for only 0.88 percent of the total fish harvest during the last segment as compared to 2.56 percent of the harvest when the lake was newer. The decrease in the spotted bass population as shown by creel census work is about the same as that indicated by the netting inventory.

Nearly 121,000 Kentucky spotted bass were harvested from the lake in 27 months which amounted to 8.35 fish and 6.29 pounds per surface acre for an average weight of 0.75 pounds per fish. Seventy-three percent of the fish were 8 to 10 inches long, with the 8 and 9 inch sizes being the most abundant.

The two species of bass could be considered as one major type and it might be more practical to speak of the "bass" production as a summary of both species. After placing both into one group the data shows that very close to two million bass were caught which is 138 bass per surface acre. The total weight was nearly 1,796,000 pounds or 124 pounds of bass per surface acre.

WHITE CRAPPIE

Crappie are one of the more popular fish in Lake Whitney and are caught in larger numbers than any other species. White Crappie are the most abundant of the two spceies of crappie present and will be the only one discussed at the present time. White crappie fishing became good for the first time in July of 1953 when the lake was about one-half filled. The best crappie fishing seasons have followed somewhat the same general pattern since that time. Crappie fishing starts improving the latter part of June or first week in July. It is excellent during most of July and August and starts on the down grade in September. The summer and fall of 1955 were different in certain respects. The good crappie fishing began later in the season, about the last week in July, and continued to improve slowly through October at which time our creel census ended. The 1955 crappie harvest was poor during the fall months in comparison to the 1954 harvest. There were about 150,000 less fishermen visting the lake during July, August, and September of 1955 than during the same months of 1954 and there were about 1,300,000 less white crappie harvested during those same months of 1955 than in 1954. A cooler summer, later stratification of the lake, and a large volume of water that flowed through the lake may have been factors influencing the smaller crappie harvest during 1955.

Most of the crappie are caught on minnows at night. The growth of white crappie as indicated by the angler's catch is a little difficult to follow due to the habit that the anglers have of releasing some of the smaller crappie that are caught. Figure 6 shows the white crappie harvest as standard-length groups and the percentage of the monthly catch that each group represents. The size of white crappie caught and some general idea of the growth rate may be obtained by following the size groups harvested during successive months of the year. All measurements were standard-length measurement to the nearest one-half inch interval. The 7 inch group was the size most abundantly caught and accounted for 39.19 percent of the entire white crappie harvest. Next in frequency of catch was the 6 inch group accounting for 23.40 percent and the 8 inch group which made up 20.73 percent of the harvest. The 6 to 8 inch groups accounted for 83.32 percent of the entire harvest and averaged 4 to 8 ounces in weight. Figure 7 shows the percentage of the total 27 month harvest as represented by standard-length groups. Where there is more than one size per group it may be of interest to note that the percentage of catch as broken down within each group was as follows: In the 3-5 inch category, about 88 percent were of the 5 inch length, 10 percent of the 4 inch length and only a few of the 3 inch length. Of the 9-10 inch fish about two-thirds were 9 inches and one-third 10 inches long. In the 11-13 inch sizes about two-thirds were 11 inches, nearly one-third 12 inches with only a few white crappie 13 inches long being caught in April, May, and June of 1955.

The harvest of white crappie from Lake Whitney has been good. Nearly $3\frac{1}{2}$ million fish weighing over $1\frac{1}{4}$ million pounds were harvested during the 27 month period of study. This is 240 white crappie weighing 87.61 pounds per surface acre of water for an average of 0.365 pounds per fish. White crappie accounted for 38.64 percent by number and 25.85 percent by weight of all the fish caught from the lake. The white crappie harvest remained almost constant during the two segments of study. They represented about the same percentage, in both pounds and numbers, of the entire fish harvest for each period of creel census study.

BLACK CRAPPIE

Black crappie are not as abundant as white crappie in Lake Whitney. Both

species are fished for in the same way and at the same time, although there is some indication that they differ in habitat preference. Further study of the two species should yield data that could be beneficial in fisheries management. The black crappie would be the more popular of the two species with the fishermen if they could be harvested in larger numbers.

There has been a little over one-half million black crappie weighing slightly less than one-third million pounds harvested from the lake. This amounts to 36 fish weighing $22\frac{1}{2}$ pounds per surface acre of water for an average of 0.635 pounds per fish. The species accounted for 5.80 percent by number and 6.62 percent by weight of all the fish harvested. The yield of black crappie has not been constant. Almost as many fish were caught during the first 10 month segment as during the last 17 month segment. Inspection of the data shows that the species accounted for 8.99 percent by number and 10.06 percent by weight for the first segment as compared with 4.27 percent by number and 5.09 percent by weight for the second segment of study. By combining the data on the two species a summary of the entire crappie harvest from Lake Whitney can be presented. Just a little less than 4 million crappie weighing over $1\frac{1}{2}$ million pounds were caught. The yield per surface acre was 276 crappie weighing 110 pounds for an average weight of 0.399 pounds per fish.

BLUEGILL

Bluegill or bream are the most common "sunfish" in the impoundment with only an occasional yellowbelly, redear, green sunfish, or warmouth being caught. Under the current heading bluegill will be discussed as including redear and yellowbelly but not the remaining sunfish.

Anglers usually turn to bluegill fishing when other species are not biting. The largest harvest of this species was made from April to July of each year. The bluegill harvest was unusually high during the summer of 1955 when fishing for other species was not productive. Most of the fish were caught with worms, shrimp, and small minnows. Many of the smaller bluegill were returned to the lake but of those retained by the fishermen the 4 and 5 inch group made up the major part of the harvest.

Nearly two million bluegills weighing 443,000 pounds were harvested from the lake. The average harvest per surface was 137 fish weighing 31 pounds. The bluegill accounted for 22 percent by number and 9 percent by weight of all fish harvested.

WHITE BASS

The white bass population came from fish that were in the Brazos River prior to the formation of the lake. The population has rapidly expanded in the last two years and fishing for white bass is becoming more popular all the time. There has been nearly 316,000 white bass weighing over 200,000 pounds harvested from the lake. The average weight per fish was 0.635 pounds. The average surface acre yield was 22 fish or 14 pounds. White bass accounted for 3.52 percent of the total number and 4.10 percent of the total weight of all fish harvested. The rapid expansion of the white bass population is noticeably reflected in the angler's catch. The species accounted for only 0.75 percent by number and 0.97 percent by weight during the first segment study as compared with 4.82 percent by number and 5.49 percent by weight during the last period of study. White bass were caught in greater numbers from August to October each year and during April and May of 1955. There is a good run of white bass in February and March of each year in the extreme upper region of the lake. The run is reported to be fished moderately heavy, but the area is not very accessible, is not covered by traffic counters, and is difficult to creel census. It is probable that the spring harvest will be larger as the white bass population increases and the fish-

ermen become better acquainted with their schooling habits in the open lake.

CHANNEL CATFISH

Catfish are caught primarily on trotlines and channel cat are the most abundant catfish in the lake. The angler had the greatest success in fishing for channal cat during June, although a rise in water level at almost any time will afford good trotline fishing in the newly inundated areas. Nearly one-half million channel cat weighing 627,000 pounds were taken from the lake, accounting for 5.52 percent by number and 12.81 percent by weight of all fish caught. The average surface acre yield was 34.28 fish and 43.41 pounds. The average weight was 1.266 pounds per fish. The 10 inch fish accounted for 18 percent of the harvest and the remainder of the catch was fairly evenly distributed between the 8 inch and 14 inch sizes. There was one exceptional group composed of 15 to 24 inch fish which in themselves amounted to 11 percent of the harvest.

MINOR SPECIES

There are seven minor species of fish that will not be discussed at any length in this report. Together they only accounted for about two percent of the entire harvest. Data on the seven minor species are shown in Table 5 with the other fish that have been discussed earlier in this paper.

LAKE PRODUCTION AND FISHING PRESSURE

For management practices of our lakes we should have some idea of how much fish the impoundments will produce and how much effort must be expended in harvesting the crop. It should be understood that only the relative productivity of the lake was sampled as represented by the take with legal hook and line methods of the popular game species and does not necessarily indicate the total harvestable amount of fish that was growing in the lake. But is is believed that the hook and line harvest of certain game species is a fair representation of the productivity of the lake. Figure 8 shows the percentage of the total 27 month harvest as represented by the more important species.

Almost 9 million fish weighing 4,898,168 pounds were harvested from Lake Whitney in 27 months. The yield per surface acre was 621 fish weighing 339 pounds. This is an average of 23 fish or 12.55 pounds per surface acre per month. A review of the data as analyzed separately for each segment of the work should indicate any changes in production as the lake progressed with age. The lake yielded 23.66 fish for the first 10 month segment and 23.71 fish for the latter 17 month segment per surface acre per month. This represents an increase of only 0.21 percent which indicates the lake has probably stabilized or at least reached its maximum in numbers of fish produced. The fishermen harvested 11.71 pounds of fish during the first segment and 13.17 pounds during the latter segment per surface acre per month for an increase of 21 percent, indicating a general growth of the fish harvested as well as pounds of fish produced in the lake.

A continued high harvest of game fish, above 99 percent of the entire catch from the lake, could very easily cause a greatly unbalanced population in favor of the rough fish. It is amazing that the populations of game and rough fish have stayed as near stable as they have in the face of such large and selective harvest of game species.

A total of 2,890,000 anglers fished Lake Whitney from August 1953 to October 1955, spending better than 16 million hours on the lake. Fishing pressure is expressed here as man-hours of fishing per surface acre and averaged 1,114 hours for each acre of water, or 41.26 hours per acre per month. Fluctuation of the fishing pressure by monthly periods and its relation to the harvest in pounds and numbers of fish caught is presented in Figure 9. The average fishing day was slightly over 5 hours long and produced 0.558 fish per man hour.

## METHODS OF FISHING AND BAITS USED

Table 6 shows the percentage of total fish harvest as caught by various fishing methods and baits. Still-fishing accounted for 84.23 percent of the total fish caught. Minnows were the most popular bait used and accounted for 66.19 percent of the fish caught.

## RECOMMENDATIONS

It is recommended that another creel census be taken on Lake Whitney for a period of 12 to 18 month duration within 3 to 5 years after the completion of this project. The purpose of the second creel census would be to check the effect of aging on the production of the impoundment as a whole. A later creel census should reveal any changes that had taken place in either the abundance, growth rate, or importance of any species in the anglers creel.

## SUMMARY

1. Lake Whitney is a new, clear-water lake located on the Brazos River just west of Whitney in Hill County, Texas.

2. Whitney Dam impounds 15,800 surface acres of water at conservation pool level forming a lake 37 miles long with a 190 mile shoreline.

3. Closure of the dam was made December 10, 1951 and the lake reached conservation pool level April 14, 1954.

4. A 27 month creel census was begun in August 1953 and completed the last of October 1955. The study was worked in two segments. The first segment was 10 months long and has been reported in another paper but most of the information is also incorporated in this report.

5. A total of 2,890,000 anglers spent 16 million hours fishing the lake.

6. The man-hours of fishing pressure amounted to 1,114 hours per surface acre of water or an average of 41.26 hours of fishing per surface acre per month.

7. The average fishing day was slightly over 5 hours long.

8. Almost 9 million fish weighing 4,898,168 pounds were harvested from the lake.

9. The yield per surface acre was 621 fish weighing 339 pounds for an average of 23 fish or 12.55 pounds per surface acre per month.

10. Sport fish, or those species classified as "game fish" in this report, accounted for over 99 percent of the harvest.

11. White crappie were the most abundant fish caught and amounted to 38.64 percent by number of all fish harvested.

12. The yield was over $3\frac{1}{4}$ million white crappie with an average of 240 crappie weighing 87.61 pounds per surface acre.

13. Slightly over 83 percent of the white crappie harvested were of the 6 to 8 inch size (standard length measurements) and were in the 4 to $8\frac{1}{2}$ ounce group.

14. The white crappie population of Lake Whitney, in numbers harvested, remained stable throughout the period of study.

15. Black crappie composed only 5.80 percent of the total catch but the average weight per fish was considerably higher than the white crappie.

16. The black crappie population has not been stable and this species seems to be rapidly decreasing in the lake.

17. Largemouth bass yielded the highest poundage per acre of any species harvested. There were about 1,875,000 bass caught which weighed a total of 1,705,890 pounds.

18. The harvest per surface acre was 130 bass weighing 118 pounds for the 27 month period of study.

19. The 8 to 10 inch bass (standard lengths) accounted for 58.71 of the largemouth bass harvested. This group of bass measured $9\frac{1}{2}$ to 12 inches in total length and weighed from 8 to 15 ounces each.

20. Kentucky spotted bass accounted for 1.34 percent of the total catch. This species is apparently decreasing in members in the lake.

21. Bluegills are fished for when other species are not biting. Nearly 2 million bluegill sunfish weighing close to one-half million pounds were harvested. This species was taken more frequently during the latter segment than during the first creel census period.

22. White bass are rapidly increasing in the lake and showed more consistently in the fishermen's creel during the latter segment work.

23. Still-fishing accounted for 84.23 percent of the total fish caught.

24. Minnows were the most popular bait used and caught 66.19 percent of the fish harvested.

Table 1. Water Depth Areas. (Pool elevation 520).

| Depth range feet | Area, acres | Percent of area (rounded) |
|---|---|---|
| 0 - 5 | 2,700 | 17 |
| 5 - 10 | 2,290 | 15 |
| 10 - 20 | 3,170 | 20 |
| 20 - 45 | 5,010 | 32 |
| 45 - 70 | 2,040 | 12 |
| 70 - 95(maxium depth) | 590 | 4 |
| Totals | 15,800 | 100 |

Table 2. High-Water Frequencies

| Pool level | Frequency |
|---|---|
| 520 (power pool level) | Once every 0.6 years |
| 525 | " " 1.3 " |
| 530 | " " 2.2 " |
| 535 | " " 3.2 " |
| 540 | " " 4.5 " |
| 545 | " " 6.5 " |
| 550 | " " 9.8 " |
| 555 | " " 16.0 " |
| 560 | " " 29.4 " |
| 565 | " " 50.0 " |

Table 3. Tabulation of Data from Creel Census Cards, Lake Whitney, Texas 1954 - 1955.

| | 1954 June | July | August | September | October | November | December | 1955 January | February |
|---|---|---|---|---|---|---|---|---|---|
| No. Anglers Contacted | 36 | 125 | 283 | 109 | 345 | 286 | 199 | 352 | 233 |
| No. Man-Hr. Fished | 213 | 744 | 1,239 | 554 | 1,566 | 1,621 | 1,086 | 2,100 | 1,155 |
| No. Fish Caught | 112 | 861 | 1,033 | 503 | 1,433 | 1,035 | 467 | 534 | 450 |
| Fish Per Man-Hour | .526 | 1.157 | .833 | .908 | .915 | .638 | .430 | .254 | .390 |
| Avg. Fishing Day (Hr.) | 5.92 | 5.95 | 4.38 | 5.08 | 4.54 | 5.67 | 5.46 | 5.97 | 4.96 |
| Avg. No. Fish Per Day | 3.11 | 6.89 | 3.65 | 4.61 | 4.15 | 3.62 | 2.35 | 1.52 | 1.93 |
| Est. Anglers On Lake | 151,117 | 174,710 | 114,842 | 109,644 | 93,083 | 76,245 | 72,024 | 62,759 | 60,576 |
| Est. No. Fish Caught | 470,566 | 1,202,729 | 419,005 | 505,749 | 386,660 | 275,813 | 169,097 | 95,166 | 117,155 |
| Est. Lb. Fish Caught | 448,696 | 402,376 | 149,926 | 202,115 | 213,609 | 177,938 | 164,621 | 86,350 | 102,335 |

Table 3. (continued).

| | March | April | May | June | July | August | September | October | Total and/or Average |
|---|---|---|---|---|---|---|---|---|---|
| No. Anglers Contacted | 330 | 906 | 585 | 328 | 316 | 430 | 173 | 214 | 5,250 |
| No. Man-Hr. Fished | 1,701 | 5,603 | 3,439 | 1,860 | 1,399 | 2,051 | 778 | 968 | 28,077 |
| No. Fish Caught | 1,193 | 1,689 | 1,517 | 704 | 416 | 895 | 495 | 454 | 13,791 |
| Fish Per Man-Hour | .701 | .301 | .441 | .378 | .297 | .436 | .636 | .469 | .491 |
| Avg. Fishing Day (Hr.) | 5.15 | 6.18 | 5.88 | 5.67 | 4.43 | 4.77 | 4.50 | 4.52 | 5.35 |
| Avg. No. Fish Per Day | 3.62 | 1.86 | 2.59 | 2.15 | 1.32 | 2.08 | 2.86 | 2.12 | 2.63 |
| Est. Anglers on Lake | 150,191 | 167,322 | 237,502 | 174,422 | 87,885 | 76,100 | 85,500 | 49,000 | 1,942,922 |
| Est. No. Fish Caught | 542,212 | 311,249 | 615,861 | 373,832 | 115,631 | 158,267 | 244,701 | 103,874 | 6,106,298 |
| Est. Lb. Fish Caught | 361,248 | 158,776 | 334,734 | 132,226 | 105,400 | 134,111 | 151,750 | 60,598 | 3,386,393 |

Table 4. Tabulation of Data from Creel Census Cards Showing: Number, Average Weight, and Percent of Month's Catch Represented by the Important Species, Lake Whitney, Texas, 1954-1955.

| Species | Largemouth Black Bass | | | Kentucky, or Spotted Bass | | | White Crappie | | | Black Crappie | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period | Number | Percent | Avg. Wt. | Number | Percent | Avg. Wt. | Number | Percent | Avg. Wt. | Number | Percent | Avg. Wt |
| June-1954 | 12 | 10.72 | .62 | 0 | 0 | 0 | 15 | 13.40 | .28 | 1 | .89 | .23 |
| July | 39 | 4.53 | .56 | 4 | .46 | .39 | 527 | 61.21 | .31 | 29 | 3.37 | .38 |
| August | 17 | 1.65 | .68 | 1 | .09 | .54 | 852 | 82.48 | .34 | 80 | 7.74 | .35 |
| September | 25 | 4.97 | .78 | 4 | .80 | .69 | 389 | 77.34 | .34 | 28 | 5.57 | .56 |
| October | 356 | 24.84 | .88 | 25 | 1.74 | .54 | 829 | 57.85 | .42 | 38 | 2.65 | .52 |
| November | 335 | 32.37 | .99 | 25 | 2.42 | .61 | 321 | 31.01 | .46 | 49 | 4.73 | .67 |
| December | 314 | 67.24 | 1.10 | 12 | 2.57 | 1.27 | 44 | 9.42 | .59 | 24 | 5.14 | .64 |
| January | 255 | 47.75 | 1.13 | 8 | 1.49 | .91 | 143 | 26.77 | .63 | 81 | 15.16 | .83 |
| February | 252 | 56.00 | 1.12 | 10 | 2.22 | .58 | 73 | 16.22 | .53 | 33 | 7.33 | .78 |
| March | 349 | 29.25 | .91 | 24 | 2.01 | .50 | 245 | 20.53 | .40 | 128 | 10.72 | 1.06 |
| April | 324 | 19.18 | .81 | 3 | .17 | .20 | 422 | 24.98 | .44 | 102 | 6.03 | .91 |
| May | 225 | 14.83 | .96 | 3 | .20 | .84 | 78 | 5.14 | .67 | 17 | 1.12 | .45 |
| June | 52 | 7.38 | 1.06 | 0 | 0 | 0 | 13 | 1.84 | .92 | 5 | .71 | .72 |
| July | 103 | 24.75 | 1.29 | 1 | .14 | .34 | 72 | 17.30 | .71 | 13 | 3.12 | .42 |
| August | 263 | 29.39 | 1.07 | 12 | 1.34 | 1.42 | 292 | 32.63 | .48 | 21 | 2.35 | .61 |
| September | 118 | 23.83 | .98 | 8 | 1.61 | 1.56 | 190 | 38.38 | .38 | 2 | .40 | .34 |
| October | 184 | 40.52 | .87 | 13 | 2.86 | .51 | 167 | 36.78 | .35 | 25 | 5.50 | .49 |
| Totals | 3,223 | 23.37 | | 153 | 1.11 | | 4,672 | 33.88 | | 676 | 4. | |

Table 4. (continued).

| Species | Drum | | | Warmouth | | | Carp | | |
|---|---|---|---|---|---|---|---|---|---|
| Period | Number | Percent | Avg. Wt. | Number | Percent | Avg. Wt. | Number | Percent | Avg. Wt. |
| June-1954 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .89 | 1.50 |
| July | 3 | .35 | .50 | 0 | 0 | 0 | 10 | 1.16 | 1.50 |
| August | 7 | .68 | .83 | 2 | .19 | .27 | 3 | .29 | 1.27 |
| September | 5 | .99 | .85 | 1 | .20 | .36 | 1 | .20 | .97 |
| October | 7 | .49 | 1.83 | 8 | .56 | .33 | 2 | .14 | 2.50 |
| November | 18 | 1.74 | 1.27 | 13 | 1.26 | .45 | 1 | .10 | 2.50 |
| December | 6 | 1.29 | 1.88 | 4 | .86 | .40 | 0 | 0 | 0 |
| January-1955 | 6 | 1.11 | 1.93 | 1 | .18 | .75 | 2 | .37 | 2.50 |
| February | 8 | 1.77 | 1.39 | 7 | 1.56 | .33 | 3 | .67 | 1.99 |
| March | 24 | 2.01 | .97 | 12 | 1.00 | .34 | 64 | 5.36 | 1.62 |
| April | 57 | 3.37 | 1.07 | 13 | .76 | .42 | 0 | 0 | 0 |
| May | 31 | 2.04 | 1.20 | 4 | .26 | .29 | 6 | .40 | 2.24 |
| June | 8 | 1.13 | 1.17 | 1 | .14 | .44 | 3 | .42 | 2.17 |
| July | 12 | 2.88 | 1.00 | 1 | .24 | .17 | 32 | 7.69 | 2.40 |
| August | 11 | 1.23 | 1.17 | 9 | 1.01 | .21 | 2 | .22 | 3.78 |
| September | 1 | .20 | 1.12 | 3 | .60 | .30 | 0 | 0 | 0 |
| October | 6 | 1.32 | .57 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 210 | 1.52 | | 79 | .57 | | 130 | .94 | |

Table 5. Lake Whitney Fish Harvest from August 1953 through October 1955 as Calculated from Creel Census Data.

| Species | Number of fish | Percent of Total Number | Pounds of Fish | Percent of Total Weight | No. of Fish Per Surface Acre | Lb. of Fish Per Surface Acre | Avg. Wt. Per Fish (lb.) |
|---|---|---|---|---|---|---|---|
| Largemouth Bass | 1,874,821 | 20.90 | 1,705,890 | 34.83 | 129.74 | 118.05 | .910 |
| K. S. Bass | 120,632 | 1.34 | 90,860 | 1.85 | 8.35 | 6.29 | .753 |
| White Crappie | 3,466,320 | 38.64 | 1,265,952 | 25.85 | 239.88 | 87.61 | .365 |
| Black Crappie | 520,514 | 5.80 | 324,366 | 6.62 | 36.02 | 22.45 | .623 |
| White Bass | 315,920 | 3.52 | 200,736 | 4.10 | 21.86 | 13.89 | .635 |
| Channel Catfish | 495,415 | 5.52 | 627,295 | 12.81 | 34.28 | 43.41 | 1.266 |
| Yellow Catfish | 7,507 | .08 | 24,851 | .51 | 0.52 | 1.72 | 3.310 |
| Bullhead Catfish | 6,340 | .07 | 4,290 | .09 | 0.44 | 0.30 | .677 |
| Drum | 86,398 | .96 | 81,559 | 1.67 | 5.98 | 5.64 | .944 |
| Bluegill | 1,975,449 | 22.02 | 443,261 | 9.05 | 136.71 | 30.68 | .224 |
| Green Sunfish | 9,362 | .10 | 2,573 | .05 | 0.65 | 0.18 | .275 |
| Warmouth | 25,995 | .29 | 9,281 | .19 | 1.80 | 0.64 | .357 |
| Carp | 64,605 | .72 | 111,474 | 2.28 | 4.47 | 7.71 | 1.725 |
| Buffalo | 2,223 | .02 | 5,780 | .12 | 0.15 | 0.40 | 2.600 |
| Totals/Avg. | 8,971,503 | 100.00 | 4,898,168 | 100.00 | 620.85 | 338.97 | 0.546 |

Table 6. The Percentage of Total Fish Harvest as Caught by Various Baits and Fishing Methods. Lake Whitney 1954-55.

| Baits | Percent | Methods | Percent |
|---|---|---|---|
| Minnows | 66.19 | Still Fishing | 84.23 |
| Worms | 18.85 | Still Fishing and Casting or Trolling | 5.22 |
| Minnow and Worm Combination | 1.43 | Trotline | 2.75 |
| Miscellaneous Live Baits | 0.06 | Casting | 6.08 |
| Dead Baits | 2.23 | Trolling | 1.52 |
| Live and Dead Bait Combination | 0.58 | Casting and Trolling Combination | 0.20 |
| Lure and Dead Bait Combination | 0.12 | | |
| Lure and Live Bait Combination | 1.19 | | |
| Lures | 8.75 | | |
| Unknown | 0.06 | | |
| Totals | 100.00 | | 100.00 |

FIGURE 1. FLUCTUATION OF WATER LEVEL IN LAKE WHITNEY

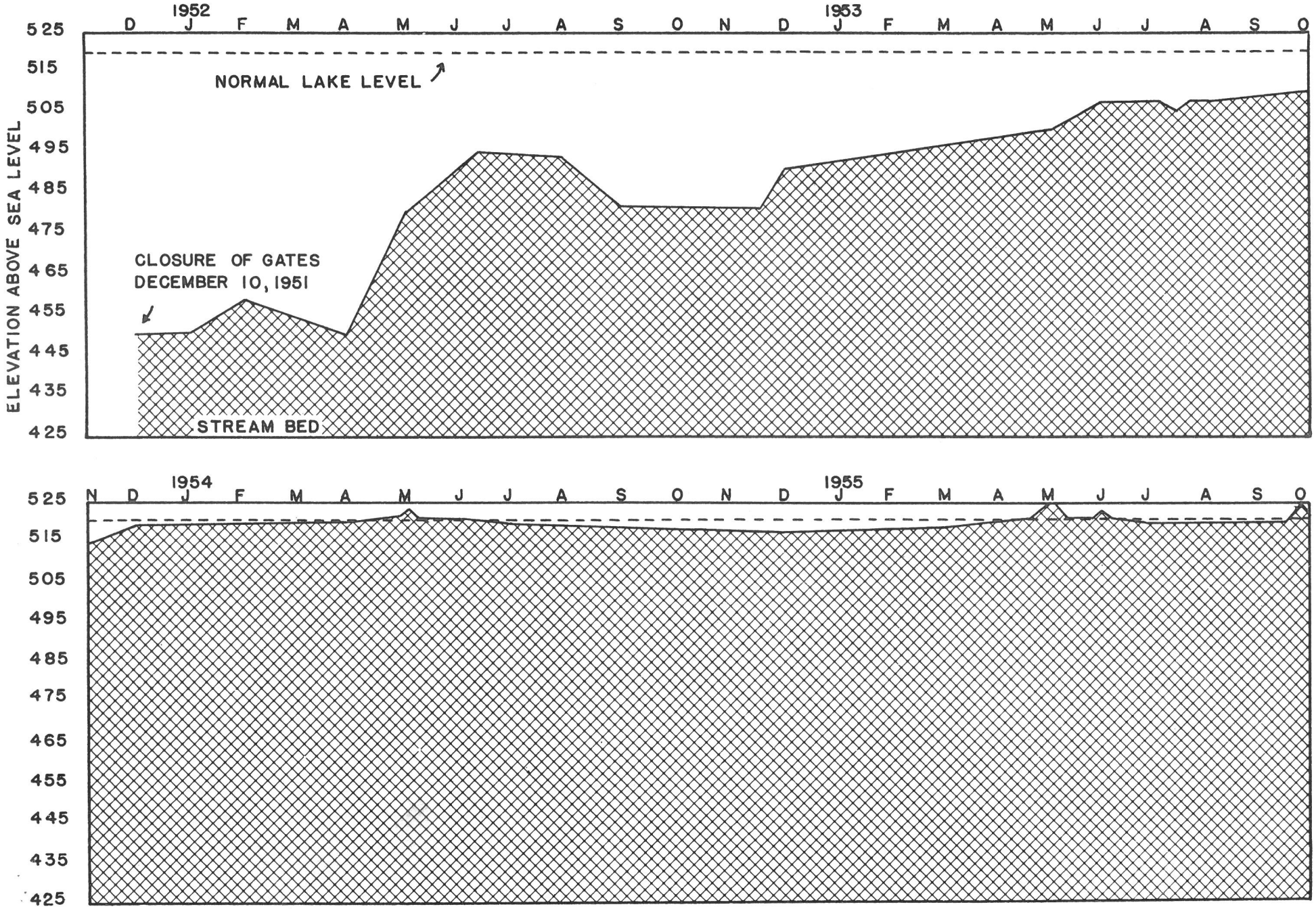
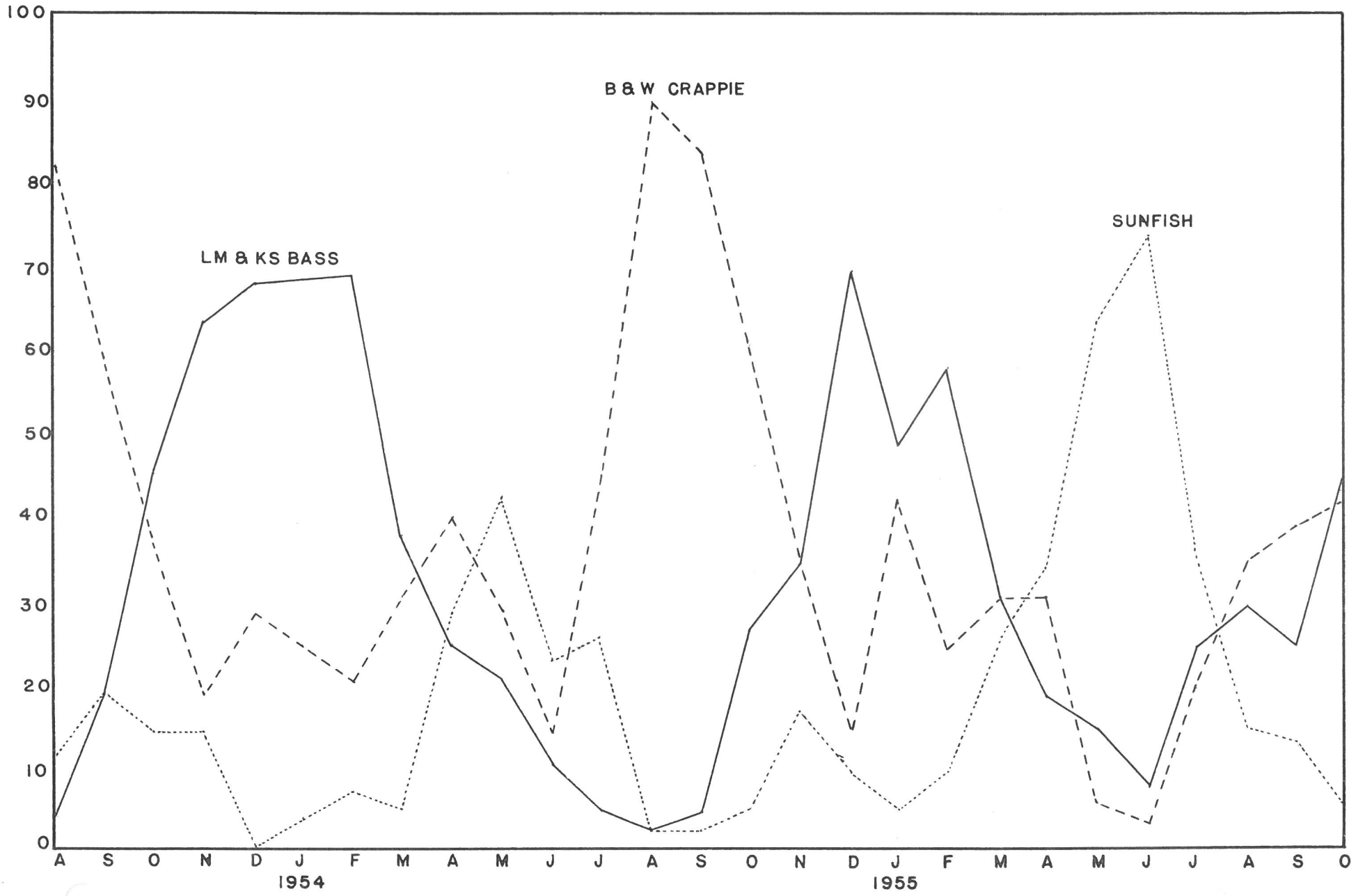


FIGURE 2

A COMPARISON OF THE MOST ABUNDANT SPECIES CAUGHT BY FISHERMEN ON LAKE WHITNEY AND THE PERCENTAGE OF THE TOTAL CATCH THAT EACH GROUP REPRESENTS



# FIGURE 3

LARGEMOUTH BASS HARVEST SHOWN AS LENGTH GROUPS AND THE PERCENTAGE OF THE TOTAL CATCH THAT EACH GROUP REPRESENTS, LAKE WHITNEY, TEXAS

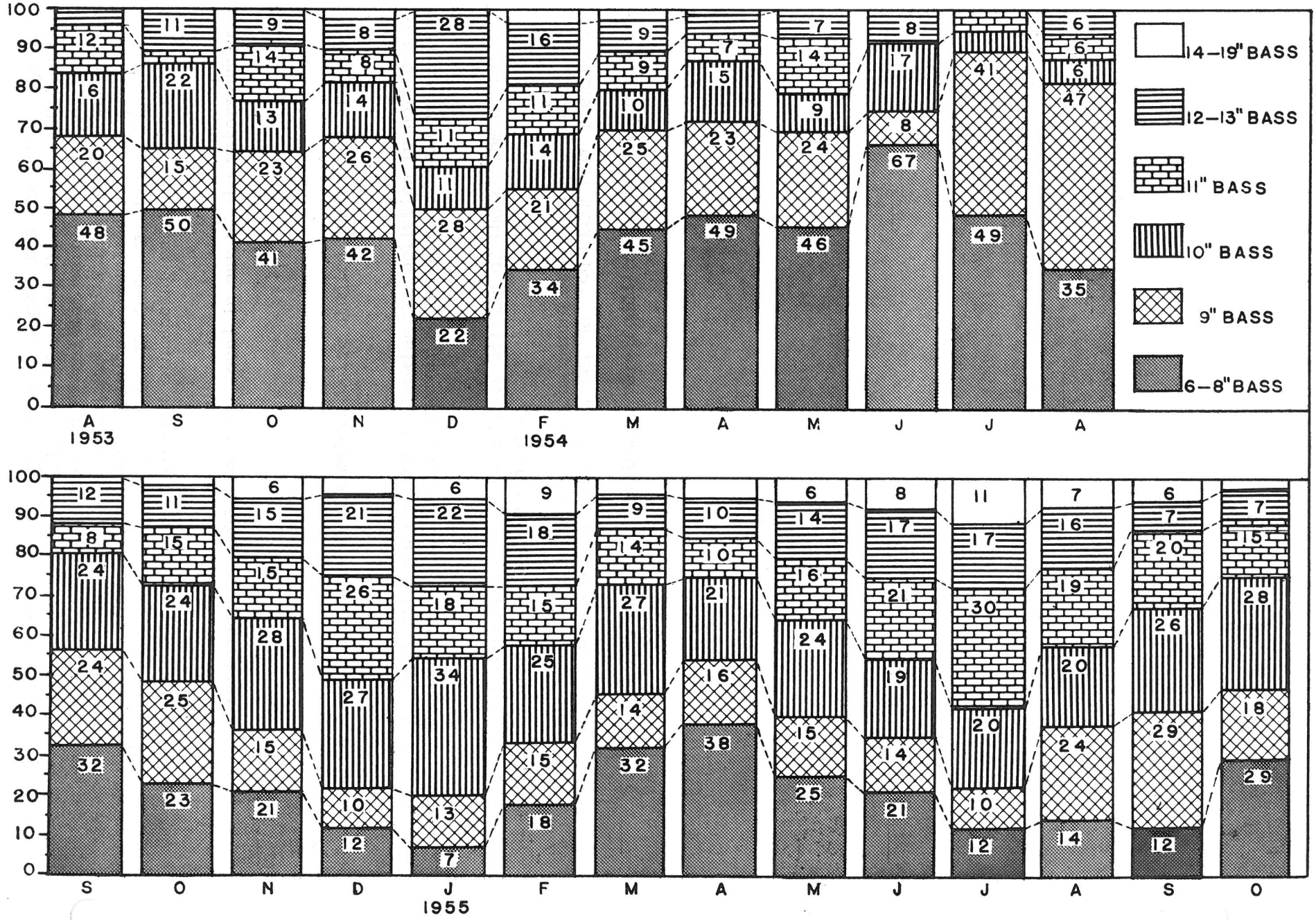


FIGURE 4

LARGEMOUTH BASS HARVEST FROM LAKE WHITNEY. THE PERCENTAGE OF THE TOTAL CATCH AS REPRESENTED BY STANDARD-LENGTH GROUPS

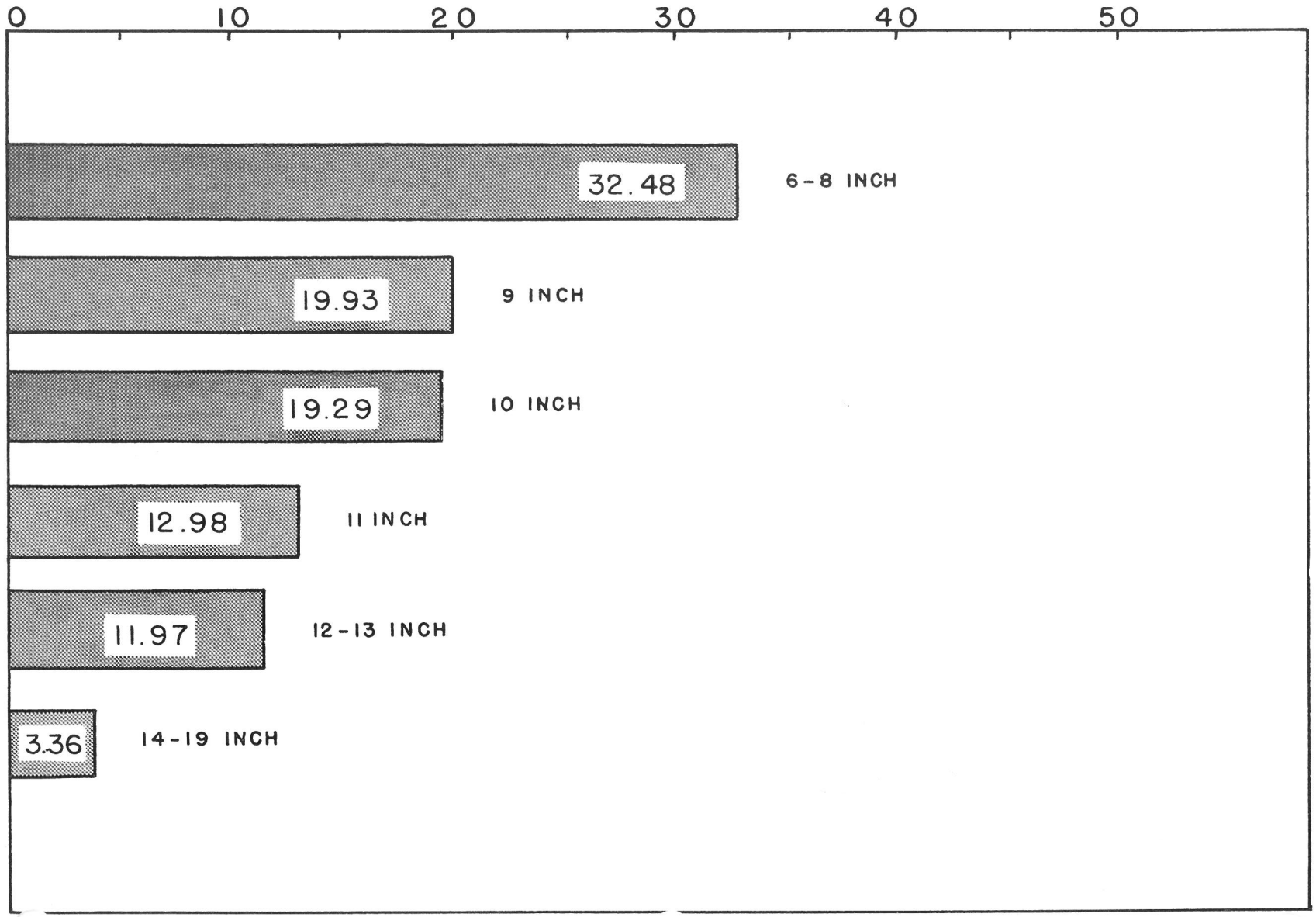
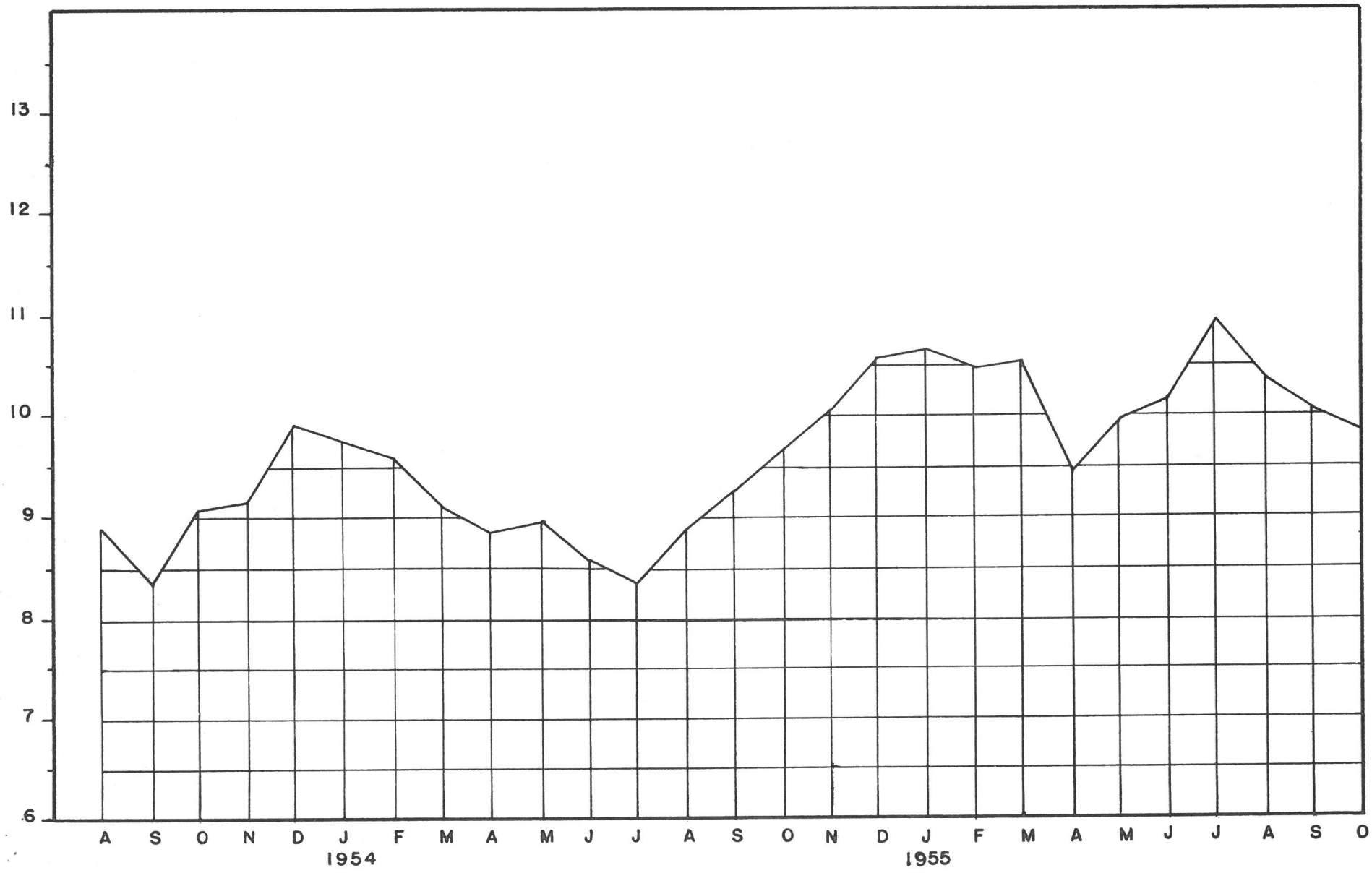


FIGURE 5

THE MEAN STANDARD LENGTH OF LARGEMOUTH BASS HARVESTED FROM LAKE WHITNEY AUGUST 1953 TO OCTOBER 1955



# FIGURE 6

WHITE CRAPPIE HARVEST SHOWN AS LENGTH GROUPS AND THE PERCENTAGE OF THE TOTAL CATCH THAT EACH GROUP REPRESENTS, LAKE WHITNEY, TEXAS

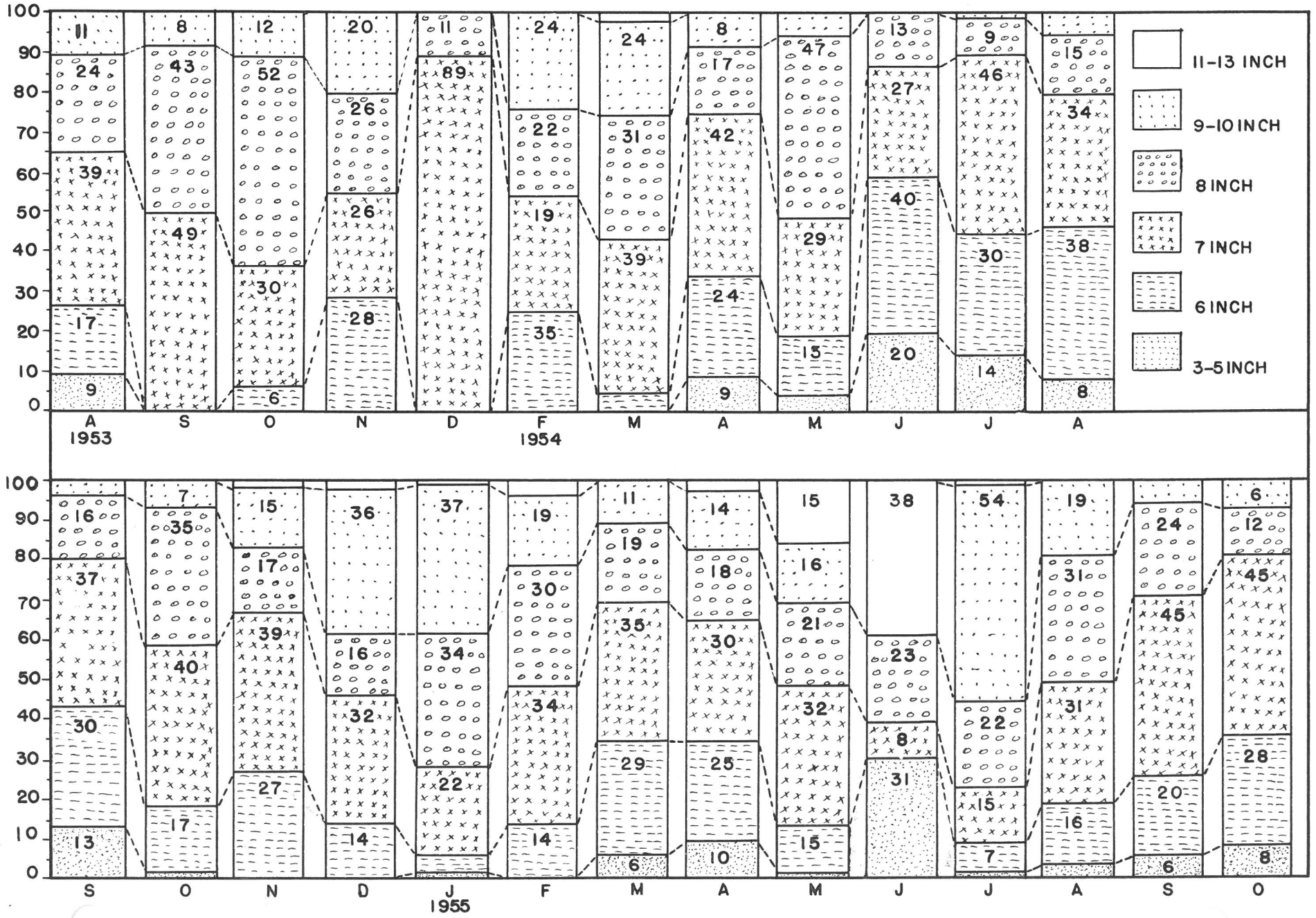


FIGURE 7

WHITE CRAPPIE HARVEST FROM LAKE WHITNEY. THE PERCENTAGE OF THE TOTAL CATCH AS REPRESENTED BY STANDARD-LENGTH GROUPS

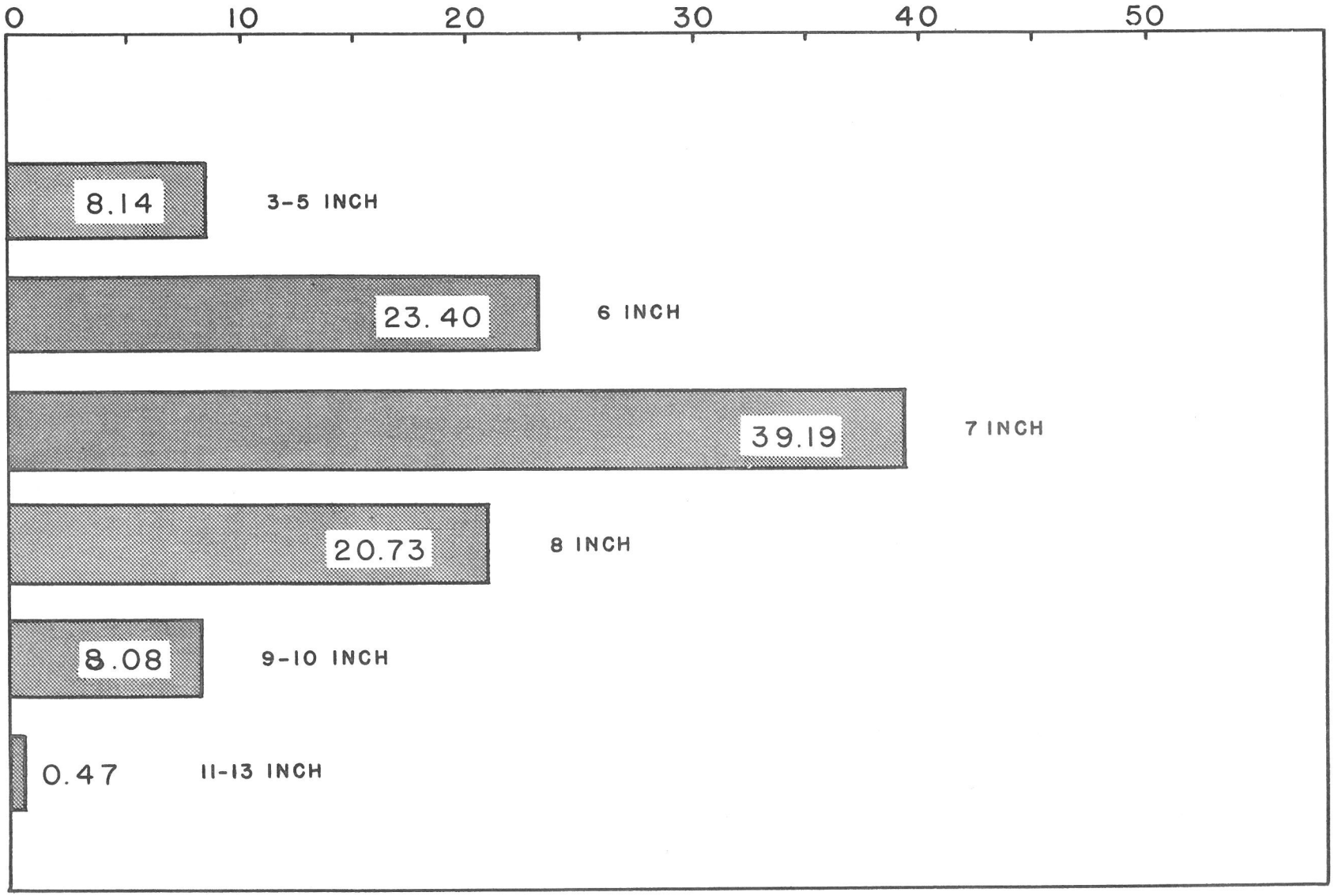


FIGURE 8

LAKE WHITNEY FISH HARVEST. THE PERCENTAGE OF THE TOTAL CATCH AS REPRESENTED BY THE MORE IMPORTANT SPECIES

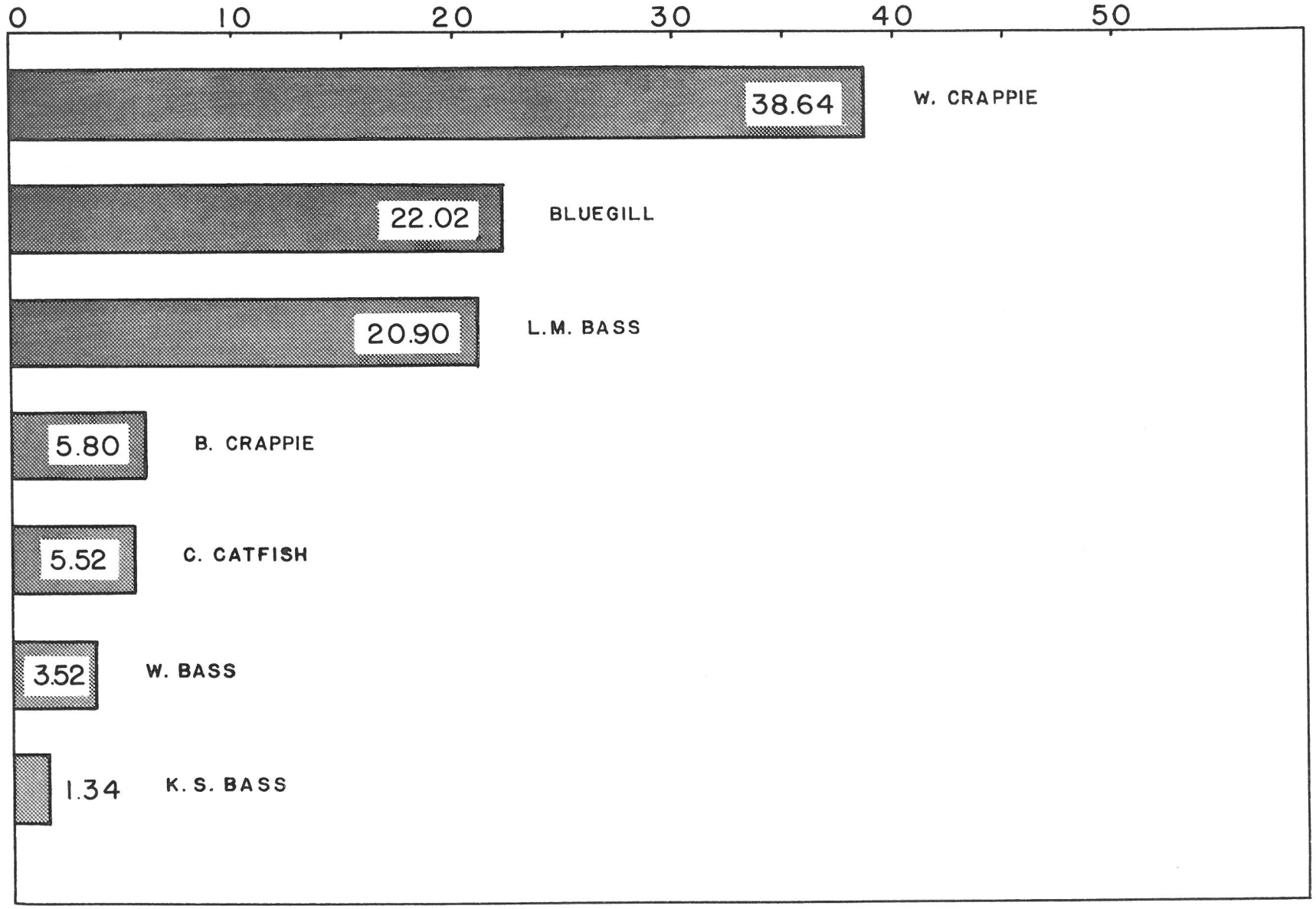


FIGURE 9

FISHING PRESSURE IN MAN-HOURS AND HARVEST IN POUNDS AND NUMBERS OF FISH PER SURFACE ACRE AUGUST 1953 — OCTOBER 1955 LAKE WHITNEY, TEXAS