

JOB COMPLETION REPORT

by

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TITLE

Creel Census of Lake Travis.

OBJECTIVES

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

PROCEDURE

Essentially the procedure followed in taking the 1954-55 creel census of Lake Travis fishes was a continuation of the procedure worked out during the 1953-54 creel census. (See Segment Completion Report, Job B-2, Project F-2-R-1.) There were, however, certain important changes.

Instead of operating the five census stations for seven days per month, they were operated for only five days per month. This change was made because of the relatively large number of days during which few or no fishermen passed through the census stations. Since this was true of all of the fishing camps on the lake, it was felt that project costs could be substantially reduced by limiting the number of census days to five without seriously impairing the accuracy of the data obtained.

The cruise count method of estimating the total number of fishermen using a given, well defined area of the lake was continued. As was done during the previous year, the count was made from a motorboat on a day when the census station in that area was manned.

As was experienced during the 1953-54 creel census efforts, the cruise count for any one census day in a given area did not necessarily produce data which could be used in estimating the total catch by anglers for a given month. This was sometimes due to the deficiency of fishermen either in the concerned area or passing through the concerned census station. For this reason it was necessary to calculate the estimated total catch by anglers for the lake as a whole instead of for individual areas and on a semi-annual basis rather than month by month.

Another difference of importance between the 1953-54 creel census and the 1954-55 creel census, was the change in the method for calculating the estimated total catch. During the 1953-54 census, all fishermen, regardless of whether they were boat, shore, or trotline fishermen, were lumped together in the calculations. As a result, the extremely large number of hours fished by trotline fishermen caused a large error in the rate of catch figures, and in the average daily creel. For this reason, these three categories of fishermen are treated separately in this report and the estimated total catch for Lake Travis in this report is based only on the sum of the estimated total catches for boat and shore fishermen.

Trotline fishing was excluded from the estimated total catch figures because of the difficulty encountered in distinguishing trotline fishermen from other boat fishermen

at the time of the cruise count. It was assumed for purposes of simplicity that persons counted in boats were not trotline fishermen. This assumption is given credence by the fact that most trotlines are "run" early in the morning, usually before the cruise count was made. Furthermore, an effort was made to keep data on all known trotline fishermen separate.

Though total catch or annual yield figures for trotline fishing are not included in this report, data concerning the success of trotline fishing, based on the sample obtained, have been included.

The formula used in estimating the total catch by all fishermen using Lake Travis, ie. all boat and shore fishermen, is given in Figure 8.

## RESULTS

Table I presents the consolidated results from the five census stations, and thus for the lake as a whole, for boat fishing. The table shows on a monthly basis, the rate of catch in fish/man hour, the total number of fishermen interviewed, the number of successful fishermen, and the number and per cent of unsuccessful fishermen.

Table II and Table III present the same results as Table I; but they are for shore and trotline fishing respectively.

Table IV gives a comparison of the numbers of fishermen engaged in fishing either from boats, from the shore, or with trotlines, and shows the comparative numbers of fishermen in the average fishing party for each of these three categories on both a monthly and a yearly basis.

Table V shows the rate of catch on a monthly and a yearly basis for each species taken by fishermen interviewed by census personnel. It also shows the comparative rate of catch for each species in fishing from the shore, boat, or with a trotline. These figures are based on pure catches where only a single species was taken.

Table VI shows the rate of catch for all species taken together and for all methods of fishing commonly employed in fishing on Lake Travis, such as: still fishing, trolling, casting, etc.

Table VII compares the relative success of fishing with the various types of baits and is based on only those catches where a single type of bait was used.

Table VIII presents the estimated total catch for boat and shore fishing and the data upon which the estimates were made for the period June through November, 1954. Table IX is the same except that it covers the period December, 1954 through May, 1955.

Table X is a breakdown of the estimated total catch by species, showing the total number and weight of each species in the sample obtained during the census; the percentage of the number and weight of the total sample for each species; the estimated total number and weight of each species taken from the lake during the study period; and the estimated yield in number and weight per acre for each species in the total catch. Note that fish taken on trotlines are not included in these estimates.

Figures 1 through 4 show the monthly average lengths for all species of fish taken by fishermen by all methods of sport fishing used in fishing Lake Travis. Only garfish have been excluded from these data because of the inability of the census takers to measure them at the time they were caught.

Figures 5 and 6 give a monthly breakdown of the total catch by species and are based on all creels examined by census takers including those of boat, shore, and trotline anglers.

Figure 7 shows a breakdown of the sampled catch for the entire study period, from June, 1954 through May, 1955.

## DISCUSSION

During the study period, the creels of 1871 boat fishermen, 1411 shore fishermen, and 351 trotline fishermen were examined by Texas Game and Fish Commission creel census personnel at the five widely separated creel census stations on Lake Travis. These fishermen took a total of 1849 fish, 2895 fish, and 719 fish respectively, or a grand total of 5463 fish for all three categories of fishermen combined (Tables I, II, and III).

Boat fishermen had an average take of 0.24 fish per man hour, or 0.98 fish per fisherman per trip; while shore fishermen took 0.59 fish per man hour, or 2.05 fish per fisherman per trip; and trotline fishermen took 0.13 fish per man hour, or 2.04 fish per fisherman per trip (Tables I, II, and III).

The average length of the fishing trip for the three different types of fishermen varied considerably. Boat fishermen had an average length of fishing trip of 4.13 hours; while shore and trotline fisherman had an average length of fishing trip of 3.43 hours and 16.13 hours per fisherman per trip respectively (Tables I, II, and III).

The rate of catch on Lake Travis is relatively low regardless of the method used in fishing, even for the successful fishermen. On the average, the successful boat fisherman caught fish at the rate of 0.38 fish per man hour; the successful shore fisherman caught fish at the rate of 0.91 fish per man hour; and the successful trotline fisherman caught fish at the rate of 0.17 fish per man hour (Tables I, II, and III).

For the fishermen interviewed during the study period, Lake Travis fishermen were successful in catching fish in the following proportions: 55 per cent of the boat fishermen were successful in catching at least one fish on each trip; 59 per cent of the shore fishermen were likewise successful; and 75 per cent of the trotline fishermen caught fish (Tables I, II, and III).

The reason for the relative good luck of the shore fishermen over the boat and trotline fishermen lies in the large number of small sunfish that inhabit the areas around the baited boat docks which provide most of the shore fishing on Lake Travis. Unfortunately the average yearly length of the sunfish taken by shore fishermen is only 5.6 inches. Except to the novice and the trotline fishermen who use these small fish as live bait on their trotlines, these small sunfish are considered a nuisance.

For boat fishermen, the most successful months for fishing during the study period were during November and December. The next most successful time for boat fishing was during early spring, in March, 1955 (Table I).

A point of interest, which may or may not be a valid reason for better fishing, is found in the fact that during the month of best fishing for boat fishermen, December, 1955, the average number of fishermen per boat was lowest for the year. During this month the number of fishermen per boat was 1.7 and the rate of catch for all boat fishermen was 0.53 fish per man hour (Table I). This might indicate that the reduced noise in boats where there are fewer men might increase the chances of fishermen in taking fish.

Largemouth bass and white bass were most frequently caught during the study period in December, 1954 (Table V). Contrary to what might be expected, however, still fishing from a boat was the most effective method of fishing during that month, with trolling as the next most effective method at that time (Table VI). This is probably accounted for in the popularity of fishing for white bass at that time of the year, toward the head of the lake just prior to the spawning season for that species.

It is questionable whether December was actually the best month for boat fishing on Lake Travis or whether only the better, more experienced fishermen were fishing at that time of the year. Since the weather during that season is unsettled and relatively cold, it would seem that it was the fishermen rather than the fishing which was better.

The usual surge in numbers of boat fishermen began in March, 1955 but came to a rather sudden end in early May with the rains which caused the level of Lake Travis to rise sharply and the water to become murky. The upper end of the lake, where most of the fishermen concentrate during the early spring for white and black bass fishing, was most drastically affected by the increased turbidity in the water.

For shore fishermen, the highest rate of catch was recorded in July, 1955, when 112 fishermen caught a total of 421 fish. This was an average rate of catch of 1.48 fish per man hour (Table II). The fish were, however, mostly small sunfish caught from the baited boat docks at the rate of 3.6 fish per man hour (Table V). Channel catfish and blue catfish were also fairly common in the catch at that time, being caught at the rate of 0.5 and 1.2 fish per man hour respectively (Table V). The poorest rate of catch for shore fishermen occurred in January when only 0.2 fish per man hour were taken (Table II). This might be explained in the coldness of the water at that time and sunfish being fairly inactive in shallow water along the shore or near the surface under the baited boat docks.

For trotline fishermen, the months of November, December, and January were relatively good, in that none of the trotline fishermen interviewed during those months failed to catch fish. The largest number of fish caught on trotlines were taken during May following a sudden rise in lake level and increased turbidity in the water. Only 8.0 per cent of the fishermen failed to catch fish during that month. The highest rate of catch for trotline fishermen also came in May when trotline fishermen caught fish at the rate of 0.22 fish per man hour (Table III).

In fishing for largemouth bass, the most prized of the sport species in Lake Travis, the data indicate that the late fall and winter months of November through March were the best period to fish for this species. The percentage of the total catch by all fishermen made up of largemouth bass ranged from 33.3 per cent in November to 47.0 per cent in February and down to 34.2 per cent in March (Figures 5 and 6).

The best months to fish for spotted bass, locally called "smallmouth bass", were December and January, when they accounted for 6.0 and 11.0 per cent of the total catch respectively (Figure 6).

White bass fishing began to be fairly good in October and picked up through fall and on into the winter months, reaching a peak percentage of the total catch for all fishermen in December. At that time 48.6 per cent of all fish caught were white or "sand" bass (Figures 5 and 6).

Crappie fishing during the study period did not produce very many fish. The highest percentage of the total catch by all fishermen, composed of crappie, (8.5 per cent), occurred in November (Figure 5).

Sunfish, as expected, comprised the great bulk of the fish taken from the lake, being caught by many men, women, and children on worms and shrimp, especially during the vacation months of June, July, and August (Figure 5). Of the total catch for the year, the sunfish species comprised 40.69 per cent (Figure 7). Though no attempt was made to separate the various species of sunfish, it is judged they were caught in the following order of frequency: bluegills, longears, green sunfish, warmouths, and Rio Grande perch. The Rio Grande perch, a cichlid, is locally classed by fishermen as a "sun perch" or "brim".

Of the catfish caught by anglers, the channel catfish was the most frequently taken. Next, came the blue catfish and then, the flathead or yellow catfish (figures 5, 6, and 7).

Carp fishermen were not disappointed in fishing Lake Travis. This species, along with the smallmouth buffalo, and the river carpsucker, comprised more than 5.0 per cent of the total catch for the year (Figures 5, 6, and 7), biting fairly well on doughbait the year around. The only months when this group of species were not caught, and apparently not sought after, were the winter months of January and February.

The most effective method of fishing was still fishing from the shore or baited dock, although this paid off mostly in small sunfish (Table VI). The most effective bait was worms, accounting for approximately a fourth of all the fish taken by anglers during the study period (Table VIII).

Surprisingly enough, the next most effective baits were the artificial baits which nosed out the live minnows by a narrow margin.

Casting from the shore, would appear to be the next most effective method of fishing (Table VI) but the limited data recorded for this method is not sufficient to form the basis for conclusions.

Trolling, as a method of fishing, was most effective during October, November, and December (Table VI) and is a popular means of taking white bass from Lake Travis during that season.

The total catch of all fish taken from Lake Travis was composed of the following species in the order of their relative abundance in the creels: sunfish (all species and including the Rio Grande perch), largemouth bass, channel catfish, white bass, blue catfish, white crappie, carp, spotted bass, smallmouth buffalo, freshwater drum, river carpsuckers, flathead or yellow catfish, gars (all species), and bullheads. This list was based on the total catch including those fish taken by boat, shore, and trotline fishermen (Figure 7).

Apparently, the two most productive areas for fishermen are the upper and lower ends of Lake Travis. This is shown rather graphically in Tables VIII and IX. During the period from June through November, 1954, the largest number of boat fishermen were interviewed in Area V, the last area toward the head of the lake. These fishermen had the best average daily creel and the area yielded the largest number of fish to boat fishermen. The area itself is underdeveloped and does not appeal to most tourists since there are few tourist facilities and no cafes. There are, however, plenty of good camping sites and a relatively large number of boats for rent.

Contrarywise, the lower end of the lake yielded the largest number of fish to shore fishermen (Table VIII). This area is the best developed area for tourists, with lots of cabins, a few places to eat, and the largest number of baited docks to fish from. It is

therefore expected that this area would have a relatively high average daily creel for shore fishermen. But as was pointed out earlier, these creels contained a very large percentage of small sunfish.

During the period from December, 1954, through May, 1955, the same pattern was developed. The largest number of fish caught by boat fishermen were taken from near the head of the lake, and the largest number of fish taken by shore fishermen were taken from the lower end of the lake (Table IX).

It is interesting to note the relative increase in numbers of fishermen in Area V during the second six months period. This was probably due to the popularity of white bass fishing in that area during the winter and spring months.

The high average daily creel of 4.5 fish per fisherman, for shore fishermen in Area V, as reflected in Table IX, was due to trotline fishermen who fished with pole and line to catch small sunfish to be used as live bait on their trotlines.

It is estimated that Lake Travis as a whole yielded 231,835 fish to boat and shore fishermen during the study period. This estimate does not include fish taken on trotlines. It is also estimated that these fish weighed a total of 180,091 lbs. (Table X).

The largest number of fish taken from the lake were sunfish, although the greatest weight for any single species was for largemouth bass. In the estimated yields of fish per acre, sunfish again were the most frequently caught with 2.6 fish per acre. Largemouth bass were second, being caught at the rate of approximately 1.0 fish per acre. The greatest estimated yield in lbs. per acre was also for the largemouth bass with 1.67 lbs. per acre (Table X).

White bass were harvested in fair numbers, at the rate of 0.7 fish per acre and 0.75 lbs. per acre (Table X).

Channel catfish, taken by boat and shore anglers, amounted to an estimated total catch of 20,471 fish or 8.83 per cent of the estimated total catch for all species. On an acre basis it is estimated that channel catfish were caught at the rate of 0.5 fish per acre and 0.23 lbs. per acre (Table X).

Though carp were harvested at only an estimated 0.2 fish per acre, their estimated harvest in lbs. per acre was 0.59 (Table X).

The per acre yield estimated for all of Lake Travis was only 5.52 fish per acre and only 4.29 lbs. per acre.

Inspection of Figures 1 through 4 will show the indicated trends in the sizes of the various species of fish taken by all Lake Travis anglers, including trotline fishermen.

It is indicated in Figure 1 that channel catfish increased in average length from June through December, 1954, and that yearling or "young of the year" catfish began to enter the creel in January, 1955. This graph also shows the average length of blue catfish to exceed that of the channel catfish for most of the year.

The three peaks in the graph for blue catfish probably indicate active feeding by larger fish during the months of September, January and March. On the other hand, the trough in the graph for February does not necessarily mean the yearlings or "young of the year" began to enter the creel at that time since the average size for blue catfish rose sharply in March.

Data for flathead, or yellow catfish, and yellow bullheads are inconclusive because of the small number of specimens seen.

In Figure 2, the graph for largemouth bass suggests that this species gradually increased in average length from 11 to 14 inches and that largemouth bass larger than 14 inches are seldom taken by anglers. Since this was also the case during the 1953-54 creel census (see Job Completion Report, Job B-2, Project F-2-R-1), it tends to indicate that when largemouth bass reach 14 inches in length they are no longer available to the angler. Speculation on what becomes of these larger bass leads to the assumption that a numerous population of these fish exists in Lake Travis but that they are not being harvested by the anglers. This assumption then leads to the impression that largemouth bass of 14 inches or larger have very little trouble in foraging for a meal because of the super-abundance of larger shad and small sunfish. For this reason, it appears that the larger bass are not attracted to the artificial lures of the "bass fishermen" or the live minnows of the live bait fishermen. If this is the case, the problem indicated is to find a way to harvest these larger bass. This is suggested for future work on Lake Travis.

Spotted bass, like the largemouth bass, ranged between 11 and 14 inches in length and it is indicated that spotted bass less than 11 inches in length are seldom kept by bass fishermen.

The average length of white crappie was fairly constant between 11 and 12 inches the year around. The low point on the graph for white crappie, as shown in Figure 2, for July, 1955, was caused by the relatively few crappie caught at that time of the year. These fish happened to be smaller individuals, most likely attracted to the baited areas under the boat docks. The other low point on the graph, for April, 1955, probably indicates the entrance of a new year class into the creels of fishermen.

As is shown in Figure 3 that white bass caught by Lake Travis anglers ranged in size from 11 to 16 inches, with an average length for the year of approximately 13 inches. The average length of fish caught during the 1954-55 creel census was approximately 2 inches greater than that of the white bass taken during the 1953-54 creel census period. This indicates a probable population increase in average age and length, with fewer young individuals being taken during the 1954-55 census period. This may also indicate a decrease in spawning success for white bass in Lake Travis during the 1954 spawning season.

The average length for sunfish, as shown in Figure 3, is approximately 6 inches. Little can be said concerning this group of species except that they are too numerous and too small. They are also too apt to steal bait from the bass and crappie fishermen.

Since only 21 freshwater drum were taken by anglers during the 1954-55 census period, the data for this species is too limited for forming any conclusions. However, the monthly and yearly average lengths for the sample obtained are shown in Figure 3.

Contrary to the trend established during the 1953-54 creel census that carp showed a more or less steady increase in average length, the trend for 1954-55 was one of gradual decrease in average length, ranging from 17 inches in June 1954 to only 12 inches in May 1955.

An interesting sidelight concerning carp was the sharp drop in numbers of carp fishermen fishing Lake Travis. This decrease in numbers of carp fishermen was noticed soon after fishing became popular on the Belton Reservoir with the people of the Temple-Belton Area of Texas. Since these people now have a lake close to home, and since this lake has a large carp population in it, the carp fishermen from the Temple-Belton area have stopped coming to Lake Travis.

So few river carpsuckers or small mouth buffalo were caught during the 1954-55 creel census period that they are mentioned here only in passing. Average lengths for these species are plotted on the graph in Figure 4.

#### RECOMMENDATIONS

1. It is recommended that a study of largemouth bass in Lake Travis be made to determine the size of the population and the disposition of the largemouth bass over 14 inches in length which are not being harvested by anglers.

2. It is recommended that further study be given the question of how to reduce the forage and rough fish populations of Lake Travis in order to make the harvest of the game species in Lake Travis easier for the angler.

#### SUMMARY

1. A total of 3833 Lake Travis anglers were interviewed by project personnel. Of this total 1871 were boat fishermen, 1411 were shore fishermen, and 351 were trotline fishermen.

2. Boat fishermen had an average catch of 0.98 fish per fishermen per trip, while shore and trotline fishermen had average catches of 2.05 and 2.04 fish per trip respectively.

3. The average lengths of fishing trips for the three types of fishermen are as follows: 4.13 hours for boat fishermen, 3.43 hours for shore fishermen, and 16.13 hours for trotline fishermen.

4. Fifty-five per cent of the boat fishermen, 59 per cent of the shore fishermen, and 75 per cent of the trotline fishermen caught at least one fish per trip.

5. Fishing for largemouth bass, white bass, and spotted bass is best during the late fall and throughout the winter months, during which time still fishing and trolling from boats are the most effective methods.

6. Crappie fishing during the 1954-55 census period was very poor.

7. Small sunfish were the bulk of the total catch comprising 40.69 per cent of the total number of fish caught.

8. A noticeable decrease occurred in the numbers of carp fishermen using Lake Travis during the 1954-55 census period as compared to the number using the lake during the 1953-54 census period.

9. The most effective method of fishing on Lake Travis remains still fishing and the most effective baits in order of their effectiveness are: worms, artificial lures, and minnows.

10. The upper end of the lake produced the largest number of fish for boat fishermen while the baited docks of the lower end of the lake produced the most for shore fishermen.

11. Boat and shore fishermen together took an estimated 231,835 fish weighing 30,091 pounds during the period from June, 1954 through May, 1955.

12. It is estimated that Lake Travis anglers harvested only 5.52 fish per acre or 4.29 pounds of fish per acre.

13. Largemouth bass averaging not larger than 14 inches in length were harvested at the rate of approximately 1 fish or 1.67 pounds per acre. This amounted to somewhat more than 40,000 largemouth bass.

14. Largemouth bass in excess of 14 inches in total length are seldom caught by Lake Travis anglers, probably because of the super-abundance of forage fishes.

Table I

Month	Successful Fishermen	Unsuccessful Fishermen	Total Fish Caught	Successful Hours Fished	Fish/man hr. Successful Fishing	Total Fishermen	Total Hours Fished	Fish/man hr. for all Fishermen	Per cent of all Fishermen Unsuccessful
June	36	66	74	171.5	0.43	102	447.5	0.17	65
July	37	56	75	188.0	0.40	93	338.0	0.22	61
August	60	54	95	207.25	0.46	114	356.75	0.23	47
September	89	67	146	304.5	0.38	156	509.5	0.29	43
October	95	64	186	461.5	0.40	159	682.5	0.27	41
November	111	35	234	522.0	0.49	146	642.25	0.36	25
December	46	24	172	242.0	0.71	70	324.0	0.53	35
January	110	85	188	585.0	0.30	195	846.5	0.22	44
February	42	81	81	181.0	0.45	123	454.5	0.18	65
March	194	123	312	947.5	0.33	317	1426.5	0.22	39
April	154	122	201	824.0	0.24	276	1264.0	0.16	44
May	49	71	85	156.5	0.54	120	437.5	0.19	59
Total	1023	848	1849	4790.75	0.38	1871	7729.5	0.24	45

Calculated yearly average fisherman day = 4.13 hours per fisherman per trip.

Calculated yearly average creel = 0.98 fish per fisherman per trip.

Lake Travis Creel Census:

Boat Fishing Results

Consolidated results of boat fishing from the five Lake Travis Creel Census Stations. These data represent only the creels of fishermen interviewed by Texas Game and Fish Commission personnel during the period June 1954, through May 1955.

Table II

Month	Successful Fishermen	Unsuccessful Fishermen	Total Fish Caught	Successful Hours Fished	Fish/man hr. Successful Fishing	Total Fishermen men	Total Hours Fished	Fish/man hr. for all Fishermen	Per cent of all Fishermen Unsuccessful
June	62	75	361	249.25	1.45	137	468.75	0.77	55
July	66	46	421	172.5	2.44	112	284.0	1.48	33
August	110	56	370	447.25	0.83	166	613.25	0.60	34
September	73	19	224	244.0	0.92	92	276.0	0.81	21
October	61	27	109	191.0	0.57	88	302.5	0.36	31
November	30	26	122	151.5	0.81	56	222.0	0.55	47
December	29	15	75	132.25	0.57	44	163.25	0.46	35
January	60	74	87	221.5	0.35	134	427.0	0.20	55
February	55	43	138	204.0	0.68	98	305.5	0.45	44
March	71	76	204	304.0	0.50	147	544.0	0.32	52
April	138	63	506	574.0	0.88	201	764.5	0.66	31
May	84	52	278	268.0	1.04	136	472.5	0.59	38
Total	839	572	2895	3157.25	0.91	1411	4843.25	0.59	41

Calculated yearly average fisherman day - 3.43 hours per fisherman per trip.

Calculated yearly average creel - 2.05 fish per fisherman per trip.

Lake Travis Creel Census:

Shore Fishing Results

Consolidated results of shore fishing from the five Lake Travis Creel Census Stations. These data represent only the creels of fishermen interviewed by Texas Game and Fish Commission personnel during the period June 1954, through May 1955.

Table III

Month	Successful Fishermen	Unsuccessful Fishermen	Total Fish Caught	Successful Hours Fished	Fish/man hr. Successful Fishing	Total Fishermen	Total Hours Fished	Fish/man hr. for all Fishermen	Per cent of all Fishermen Unsuccessful
June	28	26	100	392.50	0.26	54	838.00	0.12	49
July	46	15	150	685.00	0.23	61	877.50	0.17	25
August	37	17	75	437.00	0.16	54	556.00	0.13	32
September	14	8	38	221.00	0.17	22	292.50	0.13	37
October	11	1	37	283.00	0.13	12	296.00	0.13	9
November	14	0	22	317.00	0.07	14	317.00	0.07	0
December	2	0	4	29.00	0.14	2	29.00	0.14	0
January	8	0	15	141.00	0.16	8	141.00	0.11	0
February	6	5	16	82.00	0.20	11	199.00	0.08	46
March	21	6	24	456.00	0.05	27	603.00	0.04	27
April	18	6	30	384.00	0.08	24	562.00	0.05	25
May	57	5	208	880.00	0.24	62	953.00	0.22	8
Total	262	89	719	4307.50	0.17	351	5664.00	0.13	25

Calculated yearly average trotline trip - 16.13 hours per fisherman per trotline set.

Calculated yearly average creel - 2.04 fish per fisherman per trip.

Lake Travis Creel Census:

Trotline Fishing Results

Consolidated results of trotline fishing from the five Lake Travis Creel Census Stations. These data represent only the creels of trotline fishermen interviewed by Texas Game and Fish Commission personnel during the period June 1954, through May 1955.

Table IV

Month	Total Fishermen			Number of Parties			Average Number Fishermen per Party		
	Boat	Shore	Trotline	Boat	Shore	Trotline	Boat	Shore	Trotline
June	102	137	54	52	67	36	1.9	2.0	1.5
July	93	112	61	42	50	37	2.2	2.2	1.6
August	114	166	54	53	70	34	2.1	2.3	1.4
September	156	92	22	67	51	17	2.3	1.8	1.2
October	159	88	12	73	46	8	2.2	1.9	1.5
November	146	56	14	71	32	8	2.0	1.8	1.7
December	70	44	2	42	30	2	1.7	1.5	1.0
January	195	134	8	96	68	6	2.0	1.9	1.3
February	123	98	11	60	54	10	2.0	1.6	1.1
March	317	147	27	139	71	14	2.2	2.0	1.9
April	276	201	24	121	92	14	2.3	2.1	1.7
May	120	136	62	55	62	39	2.2	2.1	1.6
Totals	1871	1411	351	871	693	225	2.1	2.0	1.6

Lake Travis Creel Census: Consolidated results from the five Lake Travis Creel Census Stations. These data represent only the fishermen interviewed by Texas Game and Fish Commission personnel during the period June 1954, through May 1955.

Table V

Species	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
Sunfish													
Boat	2.1	0.7	0.9	2.2	0.7	--	--	--	--	--	0.2	1.5	1.1
Shore	4.5	3.6	1.3	2.4	0.8	3.6	0.8	--	2.1	2.9	2.0	1.6	2.2
Crappie													
Boat	0.8	0.4	0.3	--	0.6	0.1	4.0*	--	--	0.1	0.1	--	0.3
Shore	1.0*	--	0.9	0.7	0.3	--	--	--	--	0.3	0.9	1.0*	0.7
Largemouth bass													
Boat	0.3	--	0.6	0.3	0.2	0.3	0.4	0.2	0.3	0.2	0.2	0.2	0.3
Shore	--	--	0.1	0.6	0.4	--	0.3	0.3	0.2	0.2	0.2	0.4	0.3
Trotline	--	--	0.2*	--	--	--	--	--	--	--	--	--	0.2
White bass													
Boat	0.4	--	0.3	0.3	1.1	0.5	0.8	0.3	0.8	0.4	0.3	--	0.4
Shore	--	--	--	--	--	0.1	--	1.0	0.5*	--	1.0*	--	0.3
* - Based on only one(1) fish													
Channel catfish													
Boat	--	0.2	0.2	0.6	--	--	--	0.1	--	--	--	0.4	0.2
Shore	0.5	0.5	0.3	0.5	0.8	--	0.3	--	0.4	0.2	0.0	0.2	0.4
Trotline	0.1	0.1	0.1	0.2	0.2	--	--	--	--	0.0	0.0	0.2	0.1
Blue catfish													
Boat	0.1	0.3	0.1	--	--	--	--	0.3	--	--	0.2	0.8	0.2
Shore	0.1	1.2	--	--	0.2	0.6	--	0.3	--	--	--	--	0.4
Trotline	0.4	0.2	0.3	0.2	0.1	0.1	0.2	0.8	0.2	0.1	0.1	0.2	0.2
Spotted bass													
Boat	--	--	0.3*	0.1*	0.1*	--	--	0.1*	--	0.3	0.2	--	0.1
Shore	--	--	--	--	--	--	0.1*	0.2	0.1	--	--	--	0.2
* - Based on only one(1) fish													

Table V (continued)

Species	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
Yellow catfish Trotline	-	-	-	-	-	-	-	-	-	0.04	-	0.03	0.06
Drum Boat	0.1	-	-	-	-	-	-	-	-	-	-	-	0.1
Shortnose gar Boat	0.5	-	-	-	-	-	-	-	-	-	-	-	0.5
Carp Shore	0.4	0.6	0.4	0.4	0.8	0.4	0.5	-	-	1.5	0.5	0.6	0.5
River carpsucker Shore	0.2	-	-	1.0	-	0.7	-	-	-	-	-	0.5	0.5
Catfish (all species) Trotline	0.3	0.2	0.2	0.2	0.1	0.1	0.1	-	0.2	0.1	0.1	0.3	0.2

Lake Travis Creel Census: Return per unit of effort in fish/man hour for the various species caught by either boat, shore or trotline fishermen during the study period. These data are based only on pure catches, where only one species was involved.

Table VI

Method of Fishing	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
Still fishing													
Boat	0.2	0.3	0.3	0.4	0.5	0.4	1.0	0.3	0.3	0.2	0.2	0.4	0.3
Shore	0.7	1.5	0.6	0.8	0.4	0.6	0.5	0.2	0.5	0.4	0.7	0.6	0.6
Casting													
Boat	0.1	0.0	0.7	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2
Shore	0.0	-	0.0	2.0	0.4	-	1.3	0.4	0.2*	0.2*	-	-	0.5
					* - Based on only one(1) fish								
Trotting													
Boat	0.1	0.0	0.3	0.2	0.4	0.5	0.6	0.2	0.2	0.3	0.3	0.1	0.3
Trotline	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.1

Lake Travis Creel Census: Return per unit of effort in fish/man hour for the various methods of fishing used by fishermen during the study period. Note that these data include only those fishing trips where only one fishing method was used.

Table VII

Fish Caught on Various Baits	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
<u>Live Baits</u>													
Sunfish	3	--	1	5	--	--	--	11	1	1	--	4	26
Minnows	50	19	51	52	28	45	55	99	40	137	160	71	807
Crayfish	--	7	--	--	--	--	--	20	5	--	6	12	50
Grasshoppers	14	24	6	1	--	--	--	--	--	--	--	--	45
Worms	267	299	250	141	35	63	10	--	74	88	205	177	1609
Carp	--	--	--	--	--	--	--	--	--	2	--	--	2
<u>Dead Baits</u>													
Beef Heart	--	2	--	--	--	--	--	--	--	--	--	--	2
Liver	--	3	--	--	4	1	--	--	--	--	--	--	8
Cheese	--	--	--	--	--	--	--	--	--	--	--	4	6
Doughbait	36	66	46	48	40	11	4	--	4	2	--	4	371
Bloodbait	2	49	32	4	--	11	5	--	--	46	53	17	371
Cut Shad	25	33	19	25	37	18	4	2	5	1	4	50	147
Cut Perch	1	--	--	--	--	--	--	--	--	--	8	52	228
Cut Carp	19	19	11	4	--	--	--	--	--	--	--	--	1
Cut gar	15	--	--	--	--	--	--	--	--	--	--	--	53
Shrimp	17	59	18	34	11	5	--	--	20	--	1	20	15
Stink Bait	3	3	2	--	2	--	--	--	--	2	1	--	187
<u>Artificial Baits</u>													
Lures	5	--	34	65	144	140	84	113	54	149	81	10	879
Spinners	--	--	4	3	1	--	--	--	2	1	1	--	12
Artificial Flies	47	--	--	--	--	--	--	--	--	--	1	--	48
Lure & Fly Comb.	--	--	--	--	--	--	--	--	7	--	--	--	7
Lure & Live Bait Comb.	--	--	--	--	--	20	--	7	--	14	--	--	41

Lake Travis Creel Census:

Results of fishing showing the relative success with the various types of baits employed. (These data are based only on the creels of successful fishermen, where only a single type of bait was used.)





Table X

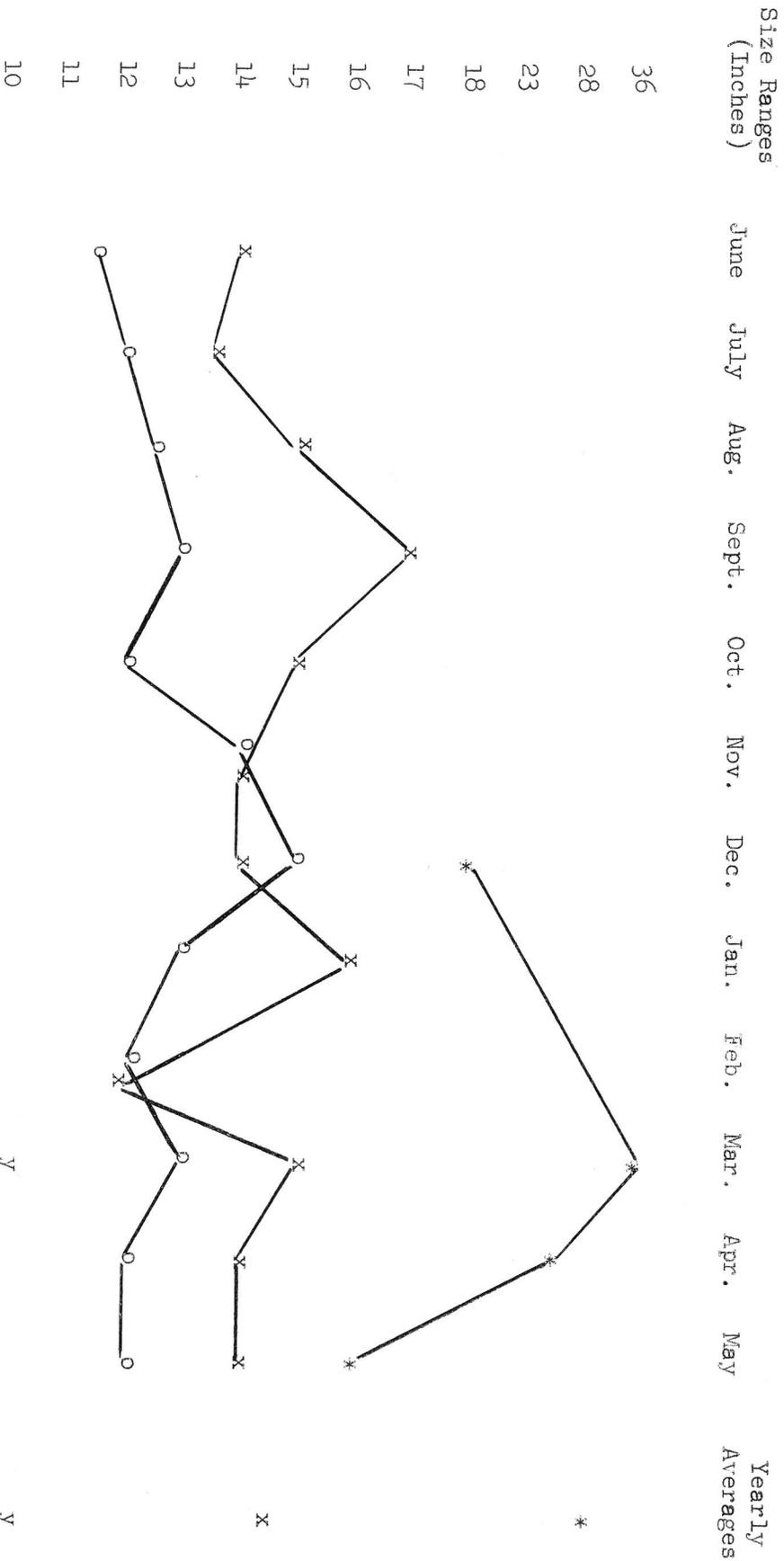
Species	Total Number	Per cent of Total	Estimated Total Catch	Estimated Yield Per Acre	Total Weight In lbs.	Per cent of Weight	Estimated Total Weight In Pounds	Estimated Yield Per Acre In lbs.
Sunfish (All species)	2223	46.74	108,360	2.6	367.4	9.94	17,901.0	0.43
White crappie	240	5.04	11,685	0.3	172.5	4.67	8,410.3	0.20
Largemouth bass	875	18.41	42,681	1.0	1439.9	38.97	70,181.6	1.67
Spotted bass	113	2.37	5,495	0.1	130.3	3.53	6,357.2	0.15
White bass	563	11.85	27,472	0.7	643.6	17.42	31,371.9	0.75
Channel catfish	420	8.83	20,471	0.5	199.9	5.41	9,742.9	0.23
Blue catfish	20	0.42	974	0.02	22.4	0.61	1,098.7	0.03
Yellow bullheads	1	0.02	46	0.001	0.6	0.01	18.0	0.0004
European carp	238	5.00	11,592	0.2	509.5	13.79	24,834.6	0.59
River carpsuckers	15	0.31	718	0.02	29.6	0.81	1,458.7	0.04
Smallmouth buffalo	25	0.53	1,229	0.03	161.1	4.36	7,851.9	0.19
Freshwater drum	21	0.44	1,020	0.03	14.8	0.40	720.4	0.02
Garfish (Shortnose)	2	0.04	92	0.002	2.9	0.08	144.1	0.003
Total	4756	99.97	231,835	5.52	3694.5	100.00	180,091.3	4.2884

## Estimated Total Catch

Shore (June through November 1954)	- 109,877
Boat (June through November 1954)	- 35,745
Shore (December 1954 through May 1955)	- 54,665
Boat (December 1954 through May 1955)	- 31,548
Estimated Grand Total	- 231,835

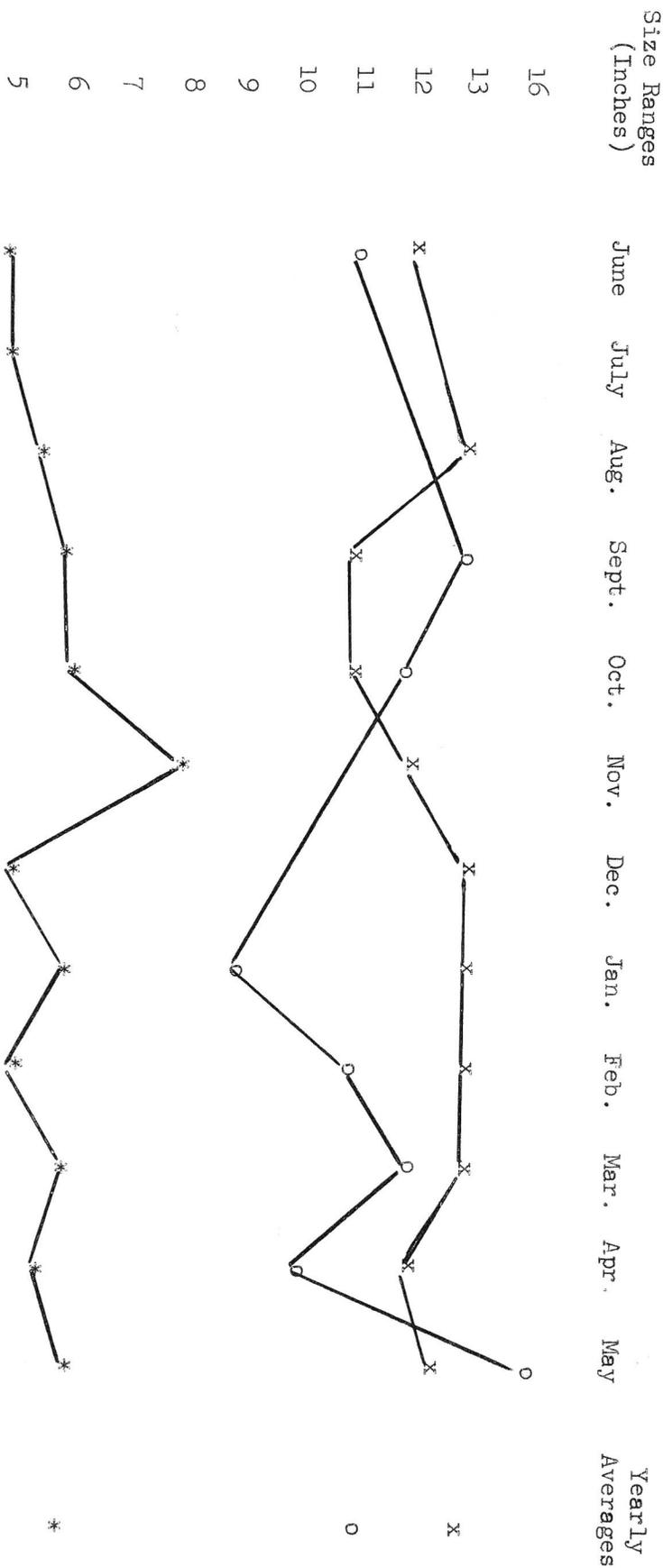
Lake Travis Creel Census: Consolidated results of boat and shore fishing and the estimated yield of fish taken by those methods during the period of June 1954 through May 1955. (Acre yields are based on 42,000 surface acres.)

FIGURE 1.  
Monthly Average Lengths



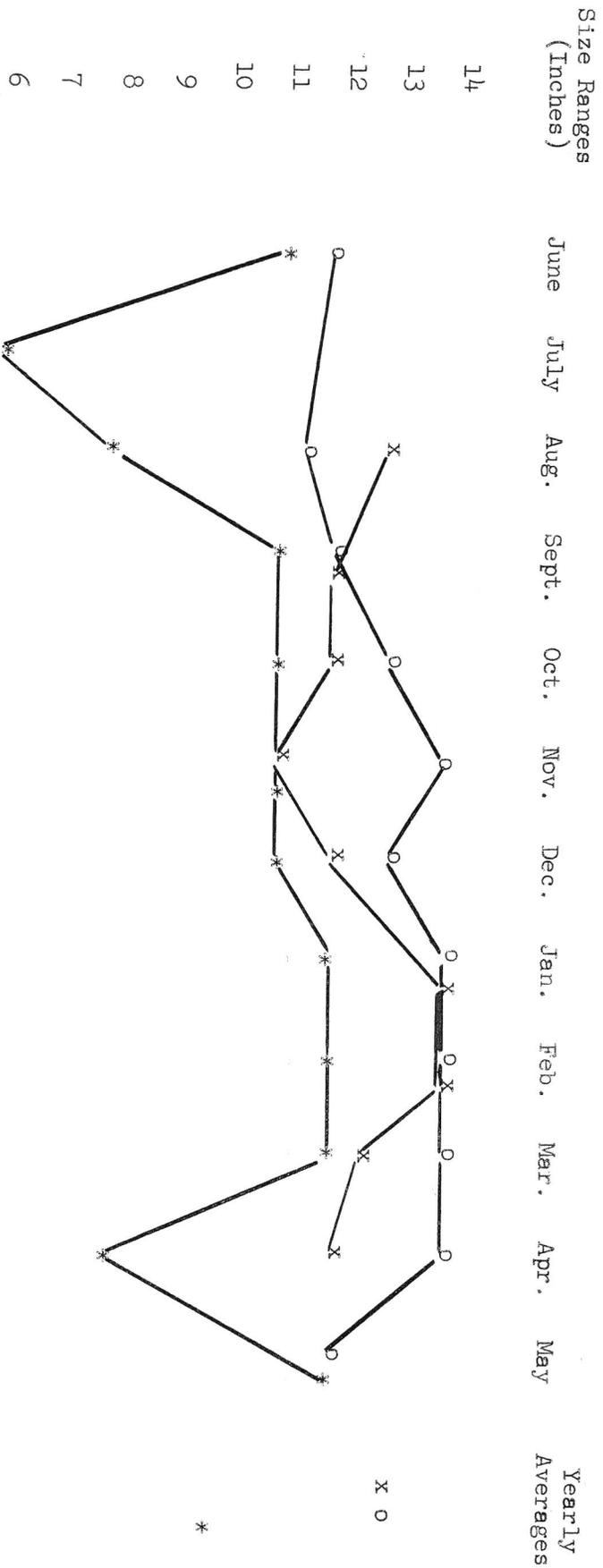
Lake Travis Creel Census: Monthly average lengths of channel catfish, blue catfish, yellow bullhead, and flathead catfish caught by Lake Travis sport fishermen during the period June 1954 through May 1955. The overall averages are based on 584 channel catfish, 551 blue catfish, 1 yellow bullhead, and 8 flathead catfish. The symbols o, x, y, and \* are for channel catfish, blue catfish, yellow bullhead, and flathead catfish respectively.

FIGURE 3.  
Monthly Average Lengths



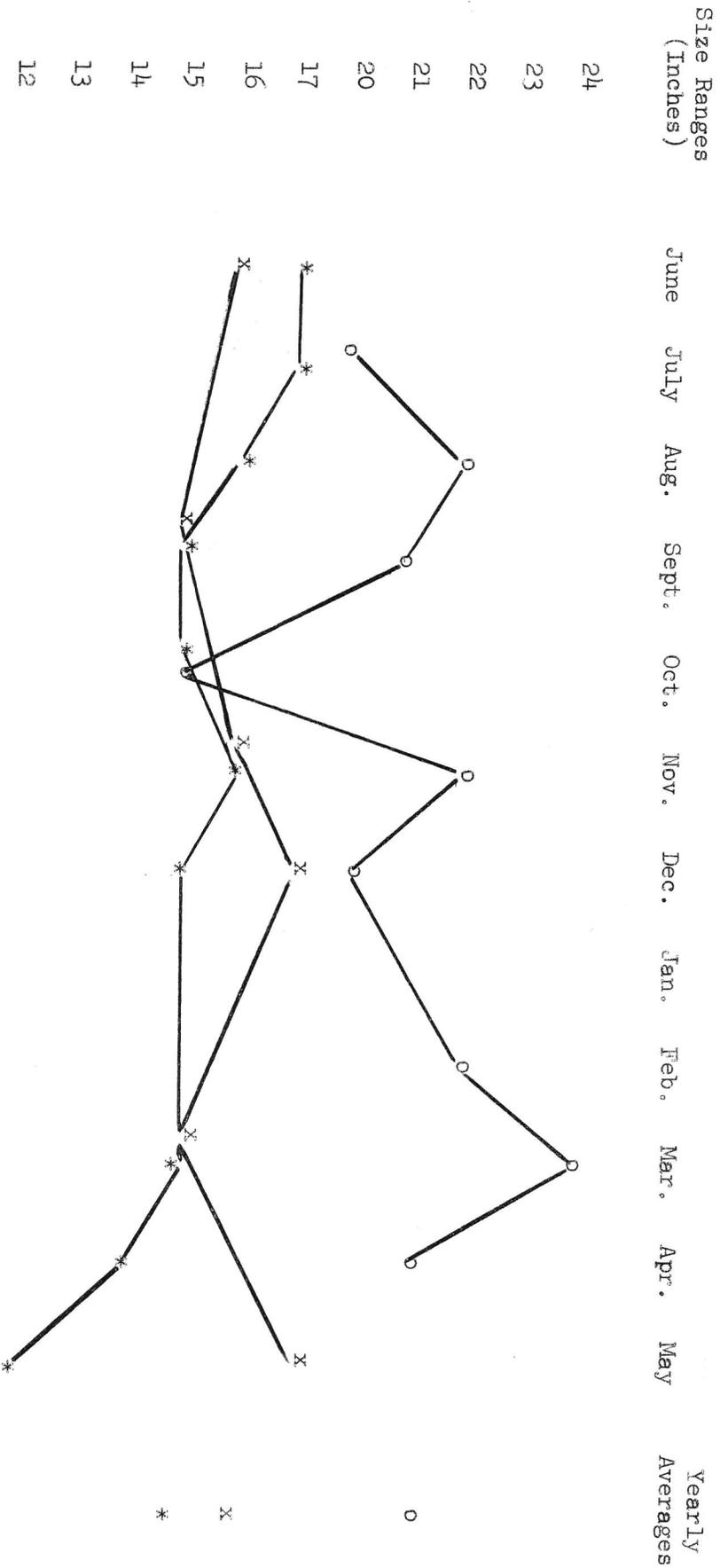
Lake Travis Creel Census: Monthly average lengths of all species of sunfish, white bass, and freshwater drum caught by Lake Travis sport fishermen during the period June 1954 through May 1955. The overall averages are based on 2,223 sunfish, 563 white bass, and 21 drum. The symbols \*, x, and o are for sunfish, white bass, and freshwater drum respectively.

FIGURE 2.  
Monthly Average Lengths



Lake Travis Creel Census: Monthly average lengths of largemouth black bass, spotted bass, and white crappie caught by Lake Travis sport fishermen during the period June 1954 through May 1955. The overall averages are based on 876 largemouth bass, 113 spotted bass, and 240 crappie. The symbols O, X, and \* are for largemouth bass, spotted bass, and white crappie respectively.

FIGURE 4.  
Monthly Average Lengths



Lake Travis Creel Census: Monthly average lengths for carp, smallmouth buffalo, and river carsucker caught by Lake Travis sport fishermen during the period June 1954 through May 1955. The over- all averages are based on 238 carp, 25 buffalo, and 15 river carsuckers. The sym- bols \*, o, and x are for carp, smallmouth buffalo, and river carsucker respectively.

Figure 5.

COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
SHORTNOSE GAR	03	0.6															
SMALLMOUTH BUFFALO	0	0															
RIVER CARPSUCKER	01	0.2															
EUROPEAN CARP	24	4.5															
CHANNEL CATFISH	75	14.0															
BLUE CATFISH	75	14.0															
YELLOW BULLHEAD	0	0															
YELLOW CATFISH	0	0															
WHITE BASS	03	0.6															
SPOTTED BLACK BASS	0	0															
LARGEMOUTH BLACK BASS	05	0.9															
SUNFISH	326	60.9															
WHITE CRAPPIE	22	4.1															
FRESHWATER DRUM	01	0.2															
TOTAL	535	100.0															

JUNE 1954

COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
SHORTNOSE GAR	0	0															
SMALLMOUTH BUFFALO	01	0.7															
RIVER CARPSUCKER	0	0															
EUROPEAN CARP	15	2.2															
CHANNEL CATFISH	87	13.4															
BLUE CATFISH	102	15.7															
YELLOW BULLHEAD	0	0															
YELLOW CATFISH	0	0															
WHITE BASS	0	0															
SPOTTED BLACK BASS	0	0															
LARGEMOUTH BLACK BASS	0	0															
SUNFISH	434	67.1															
WHITE CRAPPIE	07	1.1															
FRESHWATER DRUM	0	0															
TOTAL	646	100.0															

JULY 1954

COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
SHORTNOSE GAR	0	0															
SMALLMOUTH BUFFALO	01	0.7															
RIVER CARPSUCKER	0	0															
EUROPEAN CARP	26	4.8															
CHANNEL CATFISH	75	13.8															
BLUE CATFISH	47	8.7															
YELLOW BULLHEAD	0	0															
YELLOW CATFISH	0	0															
WHITE BASS	17	3.1															
SPOTTED BLACK BASS	01	0.2															
LARGEMOUTH BLACK BASS	28	5.2															
SUNFISH	307	56.8															
WHITE CRAPPIE	38	7.3															
FRESHWATER DRUM	0	0															
TOTAL	560	100.0															

AUGUST 1954

COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
SHORTNOSE GAR	0	0															
SMALLMOUTH BUFFALO	01	0.2															
RIVER CARPSUCKER	04	1.0															
EUROPEAN CARP	26	6.4															
CHANNEL CATFISH	70	17.2															
BLUE CATFISH	25	6.1															
YELLOW BULLHEAD	0	0															
YELLOW CATFISH	0	0															
WHITE BASS	10	2.5															
SPOTTED BLACK BASS	02	0.5															
LARGEMOUTH BLACK BASS	67	16.4															
SUNFISH	185	45.3															
WHITE CRAPPIE	17	4.2															
FRESHWATER DRUM	01	0.2															
TOTAL	408	100.0															

SEPTEMBER 1954

COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
SHORTNOSE GAR	0	0															
SMALLMOUTH BUFFALO	02	0.6															
RIVER CARPSUCKER	0	0															
EUROPEAN CARP	19	5.7															
CHANNEL CATFISH	32	9.2															
BLUE CATFISH	37	11.1															
YELLOW BULLHEAD	0	0															
YELLOW CATFISH	0	0															
WHITE BASS	50	15.2															
SPOTTED BLACK BASS	08	2.4															
LARGEMOUTH BLACK BASS	93	28.0															
SUNFISH	72	21.7															
WHITE CRAPPIE	18	5.4															
FRESHWATER DRUM	01	0.3															
TOTAL	332	100.0															

OCTOBER 1954

COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
SHORTNOSE GAR	0	0															
SMALLMOUTH BUFFALO	01	0.3															
RIVER CARPSUCKER	05	1.3															
EUROPEAN CARP	13	3.4															
CHANNEL CATFISH	08	2.1															
BLUE CATFISH	34	9.0															
YELLOW BULLHEAD	0	0															
YELLOW CATFISH	0	0															
WHITE BASS	61	16.1															
SPOTTED BLACK BASS	12	3.2															
LARGEMOUTH BLACK BASS	126	33.3															
SUNFISH	86	22.8															
WHITE CRAPPIE	32	8.5															
FRESHWATER DRUM	0	0															
TOTAL	378	100.0															

NOVEMBER 1954

Total catch by species of fish taken by anglers interviewed by Texas Game and fish personnel June through November, 1954.



COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
COMMON NAME	NUMBER OF FISH	PER CENT TOTAL	05%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
SHORTNOSE GAR	05	0.09															
SMALMOUTH BUFFALO	25	0.46															
RIVER CARPSUCKER	15	0.28															
EUROPEAN CARP	238	4.35															
CHANNEL CATFISH	584	10.69															
BLUE CATFISH	551	10.09															
YELLOW BULLHEAD	01	0.02															
YELLOW CATFISH	08	0.14															
WHITE BASS	563	10.30															
SPOTTED BLACK BASS	113	2.07															
LARGEMOUTH BLACK BASS	876	16.03															
SUNFISH	2223	40.69															
WHITE CRAPPIE	240	4.40															
FRESHWATER DRUM	21	0.39															
TOTAL	5463	100.00															

Total catch by anglers interviewed during the 1954 - 1955 creel census.

FIGURE 8.

The estimated total catch for a given area = (a) (b/c) (d) (e)

- a = Average daily number of fishermen checked at census station.
- b = Total number of fishermen using the area on all cruise count days.
- c = Total number of fishermen checked at station on all cruise count days
- d = Total number of days in period under study.
- e = Average daily creel for the period.

Therefore:

The total estimated catch for the period = sum of the estimated total catches for Areas I, II, III, IV, and V.

Method used in estimating the total catch of fish from Lake Travis by boat and shore fishermen during the period June, 1954 through May, 1955.