

JOB COMPLETION REPORT

Investigations Projects

FILE

State of TEXAS

Project No. F2R5 Name: Fisheries Investigations and Surveys of the Waters of Region 6-B.

Job No. B-14 Title: An Inventory and Creel Census of the Fishes of Lake Inks, Texas.

Period Covered: February 1, 1957 - June 30, 1957

ABSTRACT:

An inventory and creel census of the fishes of Lake Inks was conducted during the period from February through June 1957 primarily to determine the effectiveness of rough fish control work done under Job 16a-1, Project F-14-D-1.

Gill net results during March and May of 1957 indicated a noticeable decrease in the abundance of gizzard shad, the species which had been the object of selective control work in November of 1956. In addition, there was improvement in the angler's rate of catch for most species. However, prolonged rain caused serious flooding and over 1,282,000 acre feet of water were discharged through the lake from Lake Buchanan in the period from May through June 1957. With this tremendous influx of flood waters, many hundreds of thousands of shad were seen entering the lake through open floodgates on Buchanan Dam, the lake above Inks.

Because of the influx of shad with the flood, it was soon apparent that the study could no longer provide information concerning the effectiveness of the rough fish work done the previous year. For this reason the job was terminated as of June 30, 1957.

OBJECTIVES:

To determine the relative abundance of the species present; to estimate the total catch; to determine the relative abundance of each species in the total catch and to determine the effectiveness of rough fish control work as done under Job 16a-1, Project F14D1.

TECHNIQUES:

Inventory of Species

Insofar as was practicable, the work of the previous two segment periods was continued except that netting collections were made on an every-other-month basis. Net collections were taken from the now long-established net stations in March and May and were discontinued because of the heavy flooding and the termination of the job at the end of June.

No seine collections were made during the period the job was in effect because of high water and the inability of field crews to find suitable locations to seine.

Creel Census

Creel census work was continued as usual on an every-fifth-day basis. Unfortunately, however, little could be done in the way of creel census work during the period when Lake Inks was being flooded. During the rest of the study period it was necessary to seek out the fishermen wherever they were on the lake because they were not using the established census stations. The formula used in estimating the total angler's catch is the same as was used in all previous segment periods on this job. (See reports for Job B-14, Project F2R3 and F2R4).

FINDINGS:

Inventory of Species

Table 1 contains the results of netting collections made in March and May of 1957. In all, a total of 558 specimens weighing 521.5 pounds was taken in 2,000 feet of experimental type gill nets. These nets were each 125 feet in length with five sections of webbing ranging from 3/4 inch square mesh to 3 inches square mesh in 25 foot sections. A total of 16 nets were set for one night each at the eight established net stations. In the order of their abundance in the net collections the species taken were: gizzard shad (Dorosoma cepedianum), channel catfish (Ictalurus punctatus), river carpsucker (Carpionodes carpio), white crappie (Pomoxis annularis), smallmouth buffalo (Ictiobus bubalus), longnose gar (Lepisosteus osseus), white bass (Roccus chrysops), bluegills (Lepomis macrochirus), carp (Cyprinus carpio), largemouth bass (Micropterus salmoides), freshwater drum (Aplodinotus grunniens), redear sunfish (Lepomis microlophus), warmouth (Chaenobryttus gulosus), and grey redhorse suckers (Moxostoma congestum).

Creel Census

A total of 657 fishermen were interviewed during the period from February through June 1957. These fishermen took a total of 2,428 fish in 2,205 hours for an average rate of catch of 1.1 fish per man hour of fishing (Table 2.). In addition, the catch from 4 trotlines were examined during the same period. A total of only 6 fish were taken during the 68 trotline hours for a rate of catch of only 0.09 fish per trotline hour (Table 3.).

Of the fishermen interviewed, it was learned that, with the exception of a few fish caught with flyrods (fly fishing is very rarely done on this lake), casting from the shore was the most successful method of fishing employed by Lake Inks fishermen during the study period (Table 4.). Most fishermen using this particular method of fishing fished in the tailrace waters below Lake Buchanan at the head of Inks Lake. The next most successful method used was still fishing from the shore (Table 4.). Here again most of this type of fishing was done in the swift tailrace waters below Buchanan Dam during periods when the turbines were running at capacity.

The most easily taken group of species is as usual the sunfishes. These were taken at the rate of 4.59 fish per man hour by shore fishermen but only at the rate of 0.8 fish per man hour by boat fishermen (Table 5.). This discrepancy is easily explained in that most boat fishermen spend their time fishing for other species and tend to avoid sunfish wherever possible.

The single species most frequently taken by Inks Lake anglers was the white bass

This species was caught at the rate of 1.92 fish per man hour by shore fishermen and 1.81 fish per man hour by boat fishermen (Table 5.). Channel catfish were next, being caught at the rate of 1.18 and 0.97 fish per man hour by boat and shore fishermen respectively (Table 5.).

As usual live bait was the most effective type of bait in taking numbers of fish. Minnows and worms together took more than all of the other types of baits combined. Artificial lures, however, accounted for nearly a third of the fish taken during the study period (Table 6.).

In all, it was estimated that boat and shore fishermen together caught a total of 78,476 fish during the period from February 1, 1957, through June 30, 1957. Of this total 20,477 fish were caught by persons fishing from boats and 57,999 were caught by shore fishermen (Table 7.).

The estimated total catch of 78,476 fish weighed an estimated 63,608 pounds (Table 8.). In terms of per-acre yield, Lake Inks anglers took 70.61 pounds of fish per acre from the lake during the five months of the study. Naturally, since white bass were the most abundantly taken species they accounted for the greatest portion of the total weight, and though, on a per-acre yield basis this species was taken at the rate of 42.59 pounds per acre, it must be emphasized that most of these fish were caught in the tailrace waters below Buchanan Dam at the head of the lake.

The white bass, which made up nearly half of the total fish in the creels of Lake Inks anglers, were on the average 12.9 inches in total length (Table 9.). The channel catfish taken during the census period were 11.6 inches long on the average. Black bass, i.e., largemouth bass, and white crappie had average total lengths of 13.6 and 8.1 inches respectively.

It is estimated on the basis of the sample taken that 18,394 fishermen fished on Lake Inks during the 150 days from February through June 1957. Of this total, over 10,000 fishermen fished during June (Table 10.). This is explained by the fact that during the other spring months large amounts of water were being discharged through the flood gates of Buchanan Dam and an estimated 1,282,000 acre feet of water passed through Lake Inks at a maximum discharge rate of 56,000 c.f.s. This caused a maximum rise of 12 feet on this normally constant level lake.

The average number of persons in the fishing parties which come to Lake Inks was found to be 2.2 persons for parties fishing from boats and 2.0 persons fishing from the shore (Table 11.).

In Table 12 the home towns and counties of residence are given for the persons who were interviewed by creel census personnel during the study period. As would be expected the majority of the fishermen contacted reside in Central Texas, however, 54 out of the 254 Texas counties and two other states were represented in the sample.

DISCUSSION:

During the time that Inks Lake was under study it became apparent that two major fisheries problems existed in the lake. They were the increasing abundance of forage in the form of gizzard shad and the overabundance of submerged aquatic vegetation which, during portions of the year, was making fishing extremely difficult from the shoreline and

was cutting off boat fishermen from some of the more desirable and productive stretches of shoreline.

In the first short segment period of study it was found that gizzard shad comprised more than 51 percent of the total fish taken in nets from July 1955 through January 1956. Then in the eight months from February through October 1956, this species increased in abundance to the point where it comprised 66 percent of the total netted catch (See report for Job B-14, Project F2R4).

In order to combat this increasing abundance of gizzard shad it was decided that an attempt would be made to selectively control this species. In November of 1956 rotenone was used in carefully controlled concentrations to reduce this population as much as possible. It was estimated that 50 tons of gizzard shad were destroyed in this 900 acre lake. (See report for Job 16a-1, Project F14D1).

Netting samples after the control efforts were made showed a decrease in relative abundance of gizzard shad in the nettable fish population to 53 percent in December 1956. However, an increase to 62 percent was indicated in January 1957 (Table 1).

Results of gill netting in March 1957 showed a decrease in abundance of these shad to 57 percent and the results for May 1957 showed a further decrease to 51 percent (Table 1).

The average rate of catch by anglers prior to November 1956 was 0.66 fish per man hour of fishing. This was for the period from February through October 1956.

After the selective control of gizzard shad was attempted in November 1956, the rate of catch increased to 1.1 fish per man hour for the period from February through June 1957. During May 1957 alone the rate of catch was 1.6 fish per man hour with 1,820 fish in the creels of only 300 fishermen. The bulk of this catch was white bass, channel catfish, and white crappie (Table 2), (Figure 1).

More recent reports indicate that fishing is remaining good and that increasing numbers of largemouth bass entered the catch.

Unfortunately for the study, in April and May of 1957 an unprecedented rainy season caused a prolonged period of flooding everywhere along the Colorado River. The area had nearly 30 inches of rain during the two-month period and the Lower Colorado River Authority was forced to open eight floodgates on Buchanan Dam. This permitted a total of 1,282,000 acre feet of water to flow through Inks Lake during the period from May through June (Figure 2). For approximately 30 days the level of Inks Lake was from six to 12 feet above normal (Figures 3, 4, and 5).

With the excessive flow of water through the open flood gates on Buchanan Dam, tremendous numbers of gizzard shad were seen entering the lake. Though many of these were killed in the trip down the spillway, (Figure 6) many more lived through the ordeal. This influx of unwanted fish (Figure 7) soon made it apparent that the population study and creel census being made to test primarily the effectiveness of rough fish control work done under Job 16a-1, Project F14D1 were no longer able to provide the desired information and the job was terminated as of June 30, 1957.

Plans were made to combat the second of the major fisheries problems, the overabundance of submerged aquatic vegetation, under an experimental job, separate from the

inventory and creel census. However, in this case too, the hugh amounts of flood waters have made work on this problem in Inks Lake impossible and unnecessary.

As it happened, at the time of the selective control of gizzard shad treatment in November of 1956, the lake was lowered a total of 12 feet. This exposed all of the submerged vegetation in the lake and most of it was killed during the short time that the lake was drawn down. After the lake was refilled, what was left of the vegetation became dormant for the winter and had not yet begun to grow again in the spring when the floods came. Then, under six to 12 feet of water during the time when the growing season normally should have begun for these plants, the bulk of the plants apparently died. Thus, submerged vegetation has not been a problem in Inks Lake during the period covered by this report. As a matter of fact, up to the time of this writing, submerged vegetation in this lake is essentially non-existent.

CONCLUSIONS:

Up to the time of the heavy flooding of May and June, there was some indication that the efforts to control the size of the gizzard shad population had been successful in improving the quality of fishing in Inks Lake. However, such large numbers of gizzard shad were seen entering the lake that further inventory netting results would be inconclusive. Furthermore, the tremendous improvement in fishing results as shown for May and June of 1957 could not be attributed wholly to rough fish control but was in part the result of the flood which apparently stimulated fish to feed and were thus more easily taken by anglers. This was especially true in the case of white bass and channel catfish which were taken in large numbers in the tailrace waters. The improvement over the previous year in the success in fishing for black bass was probably due to the absence of vegetation that permitted more effective fishing of the shoreline areas which had not been possible in several years.

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Table 1. Inks Lake Netting Results, March and May, 1957.

| Scientific Name | No. | MARCH | | MAY | | TOTALS | | |
|-------------------------|------------|---------------|--------------|---------------|------------|---------------|--------------|---------------|
| | | % of No. | Wt. lbs. | % of No. | Wt. lbs. | % of No. | Wt. lbs. | |
| <u>L. osseus</u> | 2 | 1.53 | 15.8 | 10.77 | 46.0 | 12.26 | 61.8 | 11.85 |
| <u>D. cepedianum</u> | 74 | 56.93 | 20.9 | 14.26 | 32.9 | 8.78 | 53.8 | 10.31 |
| <u>I. bubalus</u> | 4 | 3.07 | 14.9 | 10.16 | 52.4 | 13.98 | 67.3 | 12.91 |
| <u>Carpiodes carpio</u> | 25 | 19.23 | 64.8 | 44.20 | 54.6 | 14.56 | 119.4 | 22.89 |
| <u>M. congestum</u> | | | | | 3.1 | 0.83 | 3.1 | 0.60 |
| <u>Cyprinus carpio</u> | | | | | 18.9 | 5.04 | 18.9 | 3.62 |
| <u>I. punctatus</u> | 9 | 6.93 | 13.4 | 9.15 | 158.6 | 42.50 | 172.0 | 32.98 |
| <u>R. chrysops</u> | 3 | 2.31 | 5.4 | 3.68 | 4.0 | 1.07 | 9.4 | 1.81 |
| <u>M. salmoides</u> | 2 | 1.53 | 3.1 | 2.11 | | | 3.1 | 0.59 |
| <u>C. gulosus</u> | 1 | 0.77 | 0.9 | 0.62 | | | 0.9 | 0.17 |
| <u>L. microlophus</u> | 2 | 1.54 | 0.7 | 0.47 | | | 0.7 | 0.14 |
| <u>L. macrochirus</u> | 2 | 1.54 | 0.4 | 0.28 | | | 0.8 | 0.15 |
| <u>P. annularis</u> | 6 | 4.26 | 6.3 | 4.30 | | | 9.2 | 1.76 |
| <u>A. grunniens</u> | | | | | 2.9 | 0.77 | 2.9 | 0.55 |
| | | | | | 1.1 | 0.30 | 1.1 | 0.22 |
| Totals | 130 | 100.00 | 146.6 | 100.00 | 428 | 100.00 | 521.5 | 100.00 |

Table 2. Lake Inks Creel Census - Fishing Results - These data represent only the fishermen interviewed by Texas Game and Fish Commission personnel during the period February 1957 through June 1957.

| BOAT FISHING: | | | | | | | | | | | |
|---------------------------------|----------------------|------------------------|-------------------|------------------|---------------------------|-----------------|-------------|----------------------|-------------|----------------------|-------------------------------------|
| Month | Successful Fishermen | Unsuccessful Fishermen | Total Fish Caught | Successful Hours | Fish/Successful Fishermen | Total Fishermen | Total Hours | Fish/Total Fishermen | Total Hours | Fish/Total Fishermen | Unsuccessful Fishermen (% of Total) |
| February | 33 | 14 | 46 | 121.50 | 0.38 | 47 | 192.5 | 0.24 | | | 29.79 |
| March | 42 | 30 | 78 | 153.00 | 0.51 | 72 | 239.5 | 0.33 | | | 41.66 |
| April | 25 | 19 | 31 | 88.00 | 0.35 | 44 | 159.5 | 0.19 | | | 43.18 |
| May | 22 | 2 | 45 | 52.00 | 0.87 | 24 | 55.0 | 0.82 | | | 8.33 |
| June | 80 | 10 | 568 | 361.00 | 1.57 | 90 | 387.0 | 1.47 | | | 11.11 |
| Total | 202 | 75 | 768 | 775.50 | 0.99 | 277 | 1033.5 | 0.74 | | | 27.07 |
| SHORE FISHING: | | | | | | | | | | | |
| Month | Successful Fishermen | Unsuccessful Fishermen | Total Fish Caught | Successful Hours | Fish/Successful Fishermen | Total Fishermen | Total Hours | Fish/Total Fishermen | Total Hours | Fish/Total Fishermen | Unsuccessful Fishermen (% of Total) |
| February | 11 | 23 | 28 | 26.00 | 1.08 | 47 | 192.5 | 0.24 | | | 48.93 |
| March | 4 | 24 | 5 | 17.50 | 0.29 | 28 | 57.0 | 0.09 | | | 85.71 |
| April | 16 | 10 | 158 | 45.00 | 3.51 | 26 | 60.0 | 2.63 | | | 38.46 |
| May | 48 | 21 | 217 | 91.25 | 2.38 | 69 | 124.0 | 1.75 | | | 30.43 |
| June | 173 | 37 | 1252 | 671.50 | 1.86 | 210 | 738.0 | 1.67 | | | 17.61 |
| Total | 252 | 115 | 1660 | 851.25 | 1.95 | 380 | 1171.5 | 1.42 | | | 30.26 |
| TOTAL FISHING (BOAT AND SHORE): | | | | | | | | | | | |
| Total | 454 | 190 | 2428 | 1626.75 | 1.49 | 657 | 2205.0 | 1.10 | | | 28.92 |

Table 3. Lake Inks Creel Census - Trotline Fishing Results - These data represent only the fishermen interviewed by Texas Game and Fish Commission personnel during the period February 1957 through June 1957.

| Month | Total Trotlines | Total Fish Caught on Trotlines | Total Trotline Hours Fished | Fish/Trotline Hour | Percent of Trotlines Catching Fish |
|-----------|-----------------|--------------------------------|-----------------------------|--------------------|------------------------------------|
| February* | | | | | |
| March | 3 | 2 | 50.0 | 0.04 | 66.66 |
| April* | | | | | |
| May | 1 | 4 | 18.0 | 0.22 | 100.00 |
| June* | | | | | |
| Total | 4 | 6 | 68.0 | 0.09 | 75.00 |

Note: * - No creel census interviews were made during these months.

Table 4. Lake Inks Creel Census - Returns in fish and the return per unit of effort in fish caught per man hour or trotline hour for the various methods of fishing used. These data represent only those trips where a single method of fishing was employed.

| Type of Fishing | | February | March | April | May | June | Total Fish Caught | Total Effort in Hrs. | Average Rate of Catch |
|---------------------------------|-------|----------|-------|-------|-------|-------|-------------------|----------------------|-----------------------|
| <u>Still Fishing</u> (Boat) | Fish | 7 | 0 | 9 | 45 | 281 | 342 | | |
| | Hours | 17.0 | 0 | 36.0 | 52.0 | 265.0 | | 370.0 | |
| | Rate | 0.41 | 0 | 0.25 | 0.87 | 1.06 | | | 0.92 |
| <u>Still Fishing</u> (Shore) | Fish | 0 | 2 | 158 | 142 | 1005 | 1307 | | |
| | Hours | 18.5 | 49.5 | 60.0 | 111.0 | 617.5 | | 856.5 | |
| | Rate | 0 | 0.04 | 2.63 | 1.28 | 1.63 | | | 1.53 |
| <u>Casting</u> (Boat) | Fish | 34 | 78 | 22 | 0 | 281 | 415 | | |
| | Hours | 123.5 | 233.5 | 123.5 | 3.0 | 95.0 | | 578.5 | |
| | Rate | 0.28 | 0.33 | 0.18 | 0 | 2.96 | | | 0.72 |
| <u>Casting</u> (Shore) | Fish | 28 | 2 | 0 | 25 | 213 | 268 | | |
| | Hours | 29.5 | 0.5 | 0 | 5.0 | 92.5 | | 127.5 | |
| | Rate | 0.95 | 4.00 | 0 | 5.00 | 2.30 | | | 2.10 |
| <u>Fly Fishing</u> (Boat) | Fish | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | Hours | 0 | 0 | 0 | 0 | 0 | | 0 | |
| | Rate | 0 | 0 | 0 | 0 | 0 | | | 0 |
| <u>Fly Fishing</u> (Shore) | Fish | 0 | 0 | 0 | 50 | 0 | 50 | | |
| | Hours | 0 | 0 | 0 | 4.0 | 0 | | 4.0 | |
| | Rate | 0 | 0 | 0 | 12.5 | 0 | | | 12.5 |
| <u>Trolling</u> | Fish | 0 | 0 | 0 | 0 | 6 | 6 | | |
| | Hours | 0 | 0 | 0 | 0 | 17.0 | | 17.0 | |
| | Rate | 0 | 0 | 0 | 0 | 0.35 | | | 0.35 |
| <u>Trotline</u> | Fish | 0 | 2 | 0 | 4 | 0 | 6 | | |
| | Hours | 0 | 50.0 | 0 | 18.0 | 0 | | 68.0 | |
| | Rate | 0 | 0.04 | 0 | 0.22 | 0 | | | 0.09 |

Table 5. Lake Inks Creel Census - Return per unit of effort in fish/man hour or fish/trotline hour for the various species caught. These data are based only on catches in which a single species was involved and the average rates of catch include only the rates of catch for the months during which that species was caught.

| Type of Fishing | | February | March | April | May | June | Total Fish Caught | Total Effort in Hrs. | Average Rate of Catch |
|--------------------------------------|-------|----------|-------|-------|------|-------|-------------------|----------------------|-----------------------|
| <u>Sunfish</u> (Boat) | Fish | - | - | 1 | - | - | 1 | | |
| | Hours | - | - | 12.0 | - | - | | 12.0 | |
| | Rate | - | - | 0.8 | - | - | | | 0.8 |
| <u>Sunfish</u> (Shore) | Fish | - | - | 145 | 78 | 2 | 225 | | |
| | Hours | - | - | 22.0 | 24.0 | 3.0 | | 49.0 | |
| | Rate | - | - | 6.59 | 3.25 | 0.67 | | | 4.59 |
| <u>White Crappie</u> (Boat) | Fish | - | 1 | - | - | - | 1 | | |
| | Hours | - | 5.0 | - | - | - | | 5.0 | |
| | Rate | - | 0.20 | - | - | - | | | 0.20 |
| <u>White Crappie</u> (Shore) | Fish | - | - | 2 | 3 | 36 | 41 | | |
| | Hours | - | - | 2.0 | 4.0 | 6.5 | | 12.5 | |
| | Rate | - | - | 1.0 | 0.75 | 5.54 | | | 3.28 |
| <u>Largemouth bass</u> (Boat) | Fish | 36 | 71 | 17 | 1 | - | 125 | | |
| | Hours | 118.5 | 128.0 | 40.5 | 2.0 | - | | 289.0 | |
| | Rate | 0.30 | 0.55 | 0.42 | 0.50 | - | | | 0.43 |
| <u>Largemouth bass</u> (Shore) | Fish | 6 | 2 | - | - | - | 8 | | |
| | Hours | 12.0 | 0.5 | - | - | - | | 12.5 | |
| | Rate | 0.50 | 4.00 | - | - | - | | | 0.64 |
| <u>White bass</u> (Boat) | Fish | - | - | - | - | 105 | 105 | | |
| | Hours | - | - | - | - | 58.0 | | 58.0 | |
| | Rate | - | - | - | - | 1.81 | | | 1.81 |
| <u>White bass</u> (Shore) | Fish | 22 | - | 1 | 12 | 257 | 292 | | |
| | Hours | 14.0 | - | 3.0 | 5.75 | 129.5 | | 152.3 | |
| | Rate | 1.57 | - | 0.33 | 2.09 | 1.98 | | | 1.92 |
| <u>Channel catfish</u> (Boat) | Fish | - | - | 6 | 18 | 73 | 97 | | |
| | Hours | - | - | 4.0 | 36.0 | 42.0 | | 82.0 | |
| | Rate | - | - | 1.5 | 0.50 | 1.74 | | | 1.18 |
| <u>Channel catfish</u> (Shore) | Fish | - | 3 | 1 | 14 | 71 | 89 | | |
| | Hours | - | 17.0 | 4.0 | 14.5 | 56.0 | | 91.5 | |
| | Rate | - | 0.18 | 0.25 | 0.97 | 1.27 | | | 0.97 |
| <u>Channel catfish</u> (Trotline) | Fish | - | 2 | - | 4 | - | 6 | | |
| | Hours | - | 26.0 | - | 18.0 | - | | 44.0 | |
| | Rate | - | 0.08 | - | 0.22 | - | | | 0.16 |

Table 6. Inks Lake Creel Census - Results of fishing showing the relative success with the various types of baits employed. *(The Mixed Bait category includes all fish which the census clerks could not definitely assign to a particular type of bait.)

| Type of Bait | Fish Caught | | | | | Total | Grand Total |
|--------------------------|-------------|-------|-------|-----|------|-------|-------------|
| | February | March | April | May | June | | |
| LIVE BAIT | | | | | | | |
| minnows | 7 | 2 | 5 | 50 | 685 | 749 | |
| frogs | 0 | 0 | 0 | 0 | 15 | 15 | |
| worms | 0 | 0 | 160 | 91 | 365 | 616 | |
| <u>Total</u> | 7 | 2 | 165 | 141 | 1065 | 1380 | 1380 |
| DEAD BAITTS | | | | | | | |
| shad gizzards | 0 | 1 | 0 | 18 | 0 | 19 | |
| stinkbait | 0 | 0 | 0 | 0 | 53 | 53 | |
| shrimp | 0 | 0 | 2 | 1 | 39 | 42 | |
| <u>Total</u> | 0 | 1 | 2 | 19 | 92 | 114 | 114 |
| ARTIFICIAL BAITTS | | | | | | | |
| lures | 67 | 80 | 22 | 16 | 467 | 652 | |
| spinners | 0 | 0 | 0 | 9 | 55 | 64 | |
| flies | 0 | 0 | 0 | 50 | 0 | 50 | |
| <u>Total</u> | 67 | 80 | 22 | 75 | 522 | 766 | 766 |
| MIXED BAIT* | 0 | 0 | 0 | 27 | 141 | 168 | 168 |
| GRAND TOTALS | 74 | 83 | 189 | 262 | 1820 | 2428 | 2428 |

Table 7. Inks Lake Creel Census - Estimated monthly yields in total numbers of fish taken by boat and shore fishermen during the period February 1957 through June 1957.

| Month | Boat | Shore | Total |
|----------|--------|--------|--------|
| February | 538 | 4376 | 4914 |
| March | 877 | 137 | 1014 |
| April | 654 | 8663 | 9317 |
| May | 929 | 5349 | 6278 |
| June | 17479 | 39474 | 56953 |
| Total | 20,477 | 57,999 | 78,476 |

Table 8. Inks Lake Creel Census - Results of boat and shore fishing and the estimated yields of fish taken by those methods during the period February 1957 through June 1957. (Acre yields are based on an estimated 900 surface acres.)

| Species | Total Number | Percent of Total No. | Estimated Total Catch | Estimated Yield Per Acre | Total Weight in Lbs. | Percent of Weight | Estimated Total Wt. In Pounds | Estimated Yield Per Acre in Lbs. |
|-----------------------|--------------|----------------------|-----------------------|--------------------------|----------------------|-------------------|-------------------------------|----------------------------------|
| Largemouth black bass | 162 | 6.67 | 5,234 | 5.81 | 279.0 | 14.17 | 9,013 | 10.00 |
| Spotted bass | 1 | 0.04 | 31 | 0.03 | 1.5 | 0.08 | 51 | 0.06 |
| Warmouth | 2 | 0.08 | 63 | 0.07 | 0.7 | 0.03 | 19 | 0.02 |
| Green sunfish | 1 | 0.04 | 31 | 0.03 | 0.2 | 0.02 | 13 | 0.01 |
| Redear sunfish | 53 | 2.18 | 1,713 | 1.90 | 8.2 | 0.42 | 267 | 0.29 |
| Bluegill sunfish | 306 | 12.61 | 9,896 | 10.99 | 50.6 | 2.57 | 1,635 | 1.82 |
| White bass | 1,070 | 44.07 | 34,584 | 38.42 | 1,187.0 | 60.32 | 38,368 | 42.59 |
| Channel catfish | 490 | 20.18 | 15,836 | 17.59 | 282.5 | 14.35 | 9,128 | 10.13 |
| Drum | 64 | 2.63 | 2,064 | 2.29 | 32.5 | 1.65 | 1,050 | 1.17 |
| White crappie | 272 | 11.21 | 8,797 | 9.77 | 115.3 | 5.86 | 3,727 | 4.14 |
| Longear sunfish | 4 | 0.16 | 125 | 0.13 | 1.0 | 0.05 | 32 | 0.04 |
| European carp | 2 | 0.08 | 63 | 0.07 | 4.6 | 0.23 | 146 | 0.16 |
| Buffalo | 1 | 0.05 | 39 | 0.04 | 4.9 | 0.25 | 159 | 0.18 |
| Total | 2,428 | 100.00 | 78,476 | 87.19 | 1,968.0 | 100.00 | 63,608 | 70.61 |

Table 9. Inks Lake Creel Census - Average total length in inches, of fish taken by anglers (Excluding trotline fishermen) during the period February 1957 through June 1957.

| Common Name | February | March | April | May | June | Average Length |
|-----------------------|----------|-------|-------|------|------|----------------|
| Largemouth Black Bass | 12.3 | 14.5 | 14.8 | 17.0 | 11.0 | 13.6 |
| Spotted bass | | | | | 15.0 | 15.0 |
| White crappie | | 11.0 | 6.0 | 7.1 | 8.2 | 8.1 |
| Channel catfish | | 15.3 | 15.6 | 12.8 | 11.5 | 11.6 |
| White bass | 14.2 | 13.0 | 12.0 | 10.1 | 12.8 | 12.9 |
| Freshwater drum | | | | 9.8 | 10.4 | 10.3 |
| Smallmouth buffalo | | | | | 19.0 | 19.0 |
| European carp | | | | | 16.5 | 16.5 |
| Redear sunfish | 6.0 | | 5.1 | 7.0 | | 5.3 |
| Warmouth | | | 7.0 | 8.0 | | 7.5 |
| Green sunfish | | | | 6.0 | | 6.0 |
| Bluegill sunfish | | | 6.3 | 5.5 | 6.1 | 5.9 |
| Longear sunfish | | | | | 6.5 | 6.5 |

Table 10. Inks Lake Creel Census - Estimated total usage of Inks Lake by fishermen in man-days during the period February 1957 through June 1957.

| Type of Fishing | AVG. No. of Fishermen Counted on all Cruises | Average Length of Fishing Day | Length of AVG. Fishing Trip | Number Days in Census Period | Total Man- Days Fished |
|-----------------|---|----------------------------------|--------------------------------|---------------------------------|---------------------------|
| BOAT: | | | | | |
| February | 9.1 | 8.8 | 3.5 | 28 | 641 |
| March | 8.4 | 10.2 | 2.75 | 31 | 935 |
| April | 9.4 | 12.2 | 3.5 | 30 | 983 |
| May | 4.3 | 8.5 | 1.5 | 31 | 755 |
| June | 29.8 | 13.3 | 3.25 | 30 | 3,659 |
| <u>Total</u> | | | | 150 | 6,973 |
| SHORE: | | | | | |
| February | 7.4 | 8.8 | 1.5 | 28 | 1,346 |
| March | 4.8 | 10.2 | 2.75 | 31 | 552 |
| April | 9.0 | 12.2 | 2.5 | 30 | 1,318 |
| May | 11.6 | 8.5 | 2.25 | 31 | 1,358 |
| June | 67.3 | 13.3 | 3.75 | 30 | 7,161 |
| <u>Total</u> | | | | 150 | 11,735 |

Table 11. Lake Inks Creel Census - Number of Anglers per Party - These data represent only the fishermen interviewed by Texas Game and Fish Commission personnel during the period February 1957 through June 1957.

| Month | Total Fishermen | | Number of Parties | | Average Number of Fishermen per Party | | Total Trotline |
|----------|-----------------|-------|-------------------|-------|---------------------------------------|-------|----------------|
| | Boat | Shore | Boat | Shore | Boat | Shore | |
| February | 47 | 34 | 25 | 20 | 1.9 | 1.7 | - |
| March | 72 | 28 | 39 | 13 | 1.8 | 2.2 | 3 |
| April | 44 | 26 | 22 | 14 | 2.0 | 1.9 | - |
| May | 24 | 69 | 10 | 38 | 2.4 | 1.8 | 1 |
| June | 90 | 210 | 32 | 101 | 2.8 | 2.1 | - |
| Total | 277 | 367 | 128 | 186 | 2.2 | 2.0 | 4 |

Table 12. Inks Lake Creel Census - Home towns and counties of fishermen interviewed.

| Section | County | Town | No. Persons | Total |
|----------------------------|------------|----------------|-------------|-------|
| <u>Panhandle</u> | Hutchinson | Borger | 1 | 1 |
| <u>South Plains</u> | Dawson | Lamesa | 5 | |
| | Ector | Odessa | 11 | |
| | Hale | Plainview | 2 | |
| | Howard | Big Spring | 6 | |
| | Lubbock | Lubbock | 3 | |
| | Midland | Midland | 11 | |
| | Reagan | Big Lake | 3 | |
| | Schleicher | Eldorado | 2 | |
| | Scurry | Snyder | 2 | |
| | Tom Green | Goodfellow AFB | 1 | |
| | Tom Green | San Angelo | 12 | |
| | Ward | Monahans | 2 | 60 |
| <u>Trans Pecos</u> | El Paso | El Paso | 6 | |
| | Pecos | Fort Stockton | 3 | |
| | Pecos | Iraan | 1 | 10 |
| <u>North Central Texas</u> | Cooke | Gainesville | 1 | |
| | Dallas | Dallas | 6 | |
| | Dallas | Irving | 2 | |
| | Ellis | Waxahachie | 2 | |
| | Tarrant | Grapevine | 3 | |
| | Tarrant | Arlington | 1 | 15 |
| <u>Central Texas</u> | Bastrop | Elgin | 2 | |
| | Bell | Belton | 3 | |
| | Bell | Fort Hood | 12 | |
| | Bell | Gray AFB | 5 | |
| | Bell | Killeen | 26 | |
| | Bell | Temple | 7 | |
| | Bosque | Clifton | 1 | |
| | Brown | Brownwood | 2 | |
| | Burnet | Bertram | 5 | |
| | Burnet | Briggs | 5 | |
| | Burnet | Burnet | 56 | |
| | Burnet | Inks Lake | 6 | |
| | Colorado | Columbus | 1 | |
| | Comal | New Brunfels | 10 | |
| | Coryell | Copperas Cove | 11 | |
| | Coryell | Gatesville | 3 | |
| | Erath | Stephenville | 11 | |
| | Eastland | Cisco | 2 | |
| | Gillespie | Fredericksburg | 2 | |
| | Grimes | Navasota | 2 | |

| <u>Section</u> | <u>County</u> | <u>Town</u> | <u>No. Persons</u> | <u>Total</u> |
|----------------------|---------------|----------------|--------------------|--------------|
| <u>Central Texas</u> | Hays | Kyle | 1 | |
| | Hamilton | Hamilton | 3 | |
| | Lampasas | Lampasas | 26 | |
| | Lee | Giddings | 1 | |
| | Llano | Buchanan | 4 | |
| | Llano | Llano | 5 | |
| | McCulloch | Brady | 6 | |
| | McLennan | McGregor | 3 | |
| | McLennan | Waco | 18 | |
| | Mason | Mason | 6 | |
| | Milam | Thorndale | 2 | |
| | Travis | Austin | 71 | |
| | Travis | Lake Travis | 4 | |
| | Williamson | Bartlett | 4 | |
| | Williamson | Florence | 19 | |
| Williamson | Liberty Hill | 6 | | |
| Williamson | Taylor | 2 | 353 | |
| <u>East Texas</u> | Brazos | Bryan | 3 | |
| | Burleson | Somerville | 2 | |
| | Brazoria | Lake Jackson | 2 | |
| | Griggs | Longview | 1 | |
| | Harris | Houston | 23 | |
| | Hunt | Greenville | 7 | |
| | Smith | Tyler | 6 | 44 |
| <u>South Texas</u> | Bexar | San Antonio | 134 | |
| | Bexar | Randolph Field | 5 | |
| | Brazoria | Old Ocean | 7 | |
| | Jim Wells | Alice | 1 | |
| | Kleberg | Kingsville | 3 | |
| | Refugio | Refugio | 4 | |
| | Webb | Laredo | 4 | 158 |
| <u>Out of State</u> | Kansas | | 2 | |
| | New Mexico | Jal | 1 | 3 |
| <u>Grand Total</u> | | | | 641 |



Figure 1. Census personnel check catch of Inks Lake fisherman.

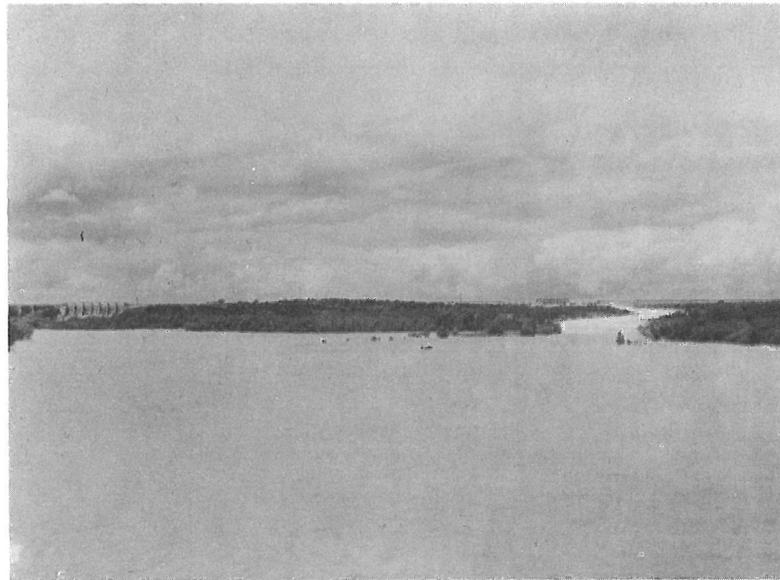


Figure 2. Flood waters being discharged from Buchanan Dam into Inks Lake. At time of Photo on April 26, 1957, five flood gates were open. The normal flow of discharged water comes through turbines just out of view to the left of the picture.

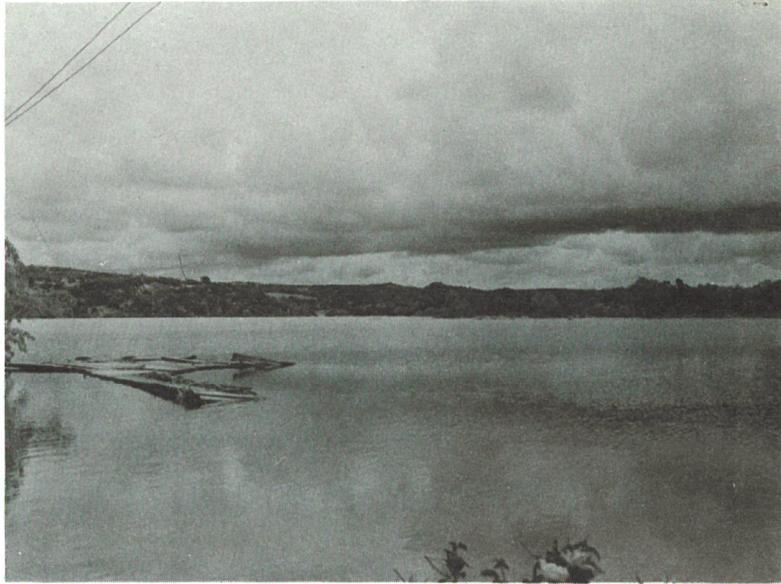


Figure 3. Damaged boat dock at Inks Lake State Park. This area was inundated by a 12 foot rise above normal lake level. April 26, 1957.



Figure 4. Picnic grounds flooded by six or more feet of water above normal water level. April 26, 1957.