

STATE Texas
PROJECT NO. F-4R-2 Job B-4
PERIOD June 1, 1954-October
31, 1955

FILE

SEGMENT COMPLETION REPORT

by

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TITLE

Inventory of species present in Possum Kingdom Lake, Palo Pinto County, Texas.

OBJECTIVES

To determine the species present and their relative abundance as well as to determine the ecological factors influencing their distribution.

HISTORY AND DESCRIPTION

Possum Kingdom Reservoir is a multipurpose reservoir providing water for hydroelectric, irrigation, and municipal uses. It is owned and operated by the Brazos River Conservation and Reclamation District and was completed in 1941.

This lake is subject to heavy fluctuations in water level because of the variations in demand by power and irrigation needs. This is a clear water lake that impounds 19,991 surface acres at spillway level and has a 310 mile shoreline. The lake is a long narrow body of water that winds among the foothill type mountains that comprise the terrain of these portions of Palo Pinto, Stephens, Young, and Jack Counties. The major portion of the lake is in Palo Pinto County but when full extends into the other counties named. The shoreline is irregular and consists of gently sloping valleys and high limestone bluffs.

The original vegetation was not removed because of early rains that filled the basin in six days soon after completion of dam. This vegetation has been augmented by the saltcedar, and willows that have encroached upon the marginal area that remained exposed during the long period of low water that preceded the refilling in 1953. The aquatic vegetation present is not a problem except during periods of low water when much of the better fishing areas are choked with Najas guadalupensis to the extent that a motor boat is unable to penetrate the large fields of this plant. This condition exists in areas where the water depth is less than six feet. In water areas where the depth is above six feet the fishing was generally good above these weed beds which provided both feeding and resting cover for the fish present.

FINDINGS

Table 1 presents the checklist of species taken in both seine and net collections. This total of 33 species includes 10 species not present in the checklist for the previous segment and fails to include two species taken in the 1953-54 segment. The Rio Grande tetra and the Striped mullet were introduced as bait minnows and have not

become established as yet. The species that are new to this checklist are; Shortnose gar, Texas grey redhorse, Sharpnose shiner, Southern sand shiner, Blackspot shiner, Yellow bullhead, Blackstripe topminnow, Kentucky spotted bass, Western spotted sunfish, and Black crappie. Eleven seine and 120 net collections were made.

Table 2 shows the results of the eleven seine collections at eight seining stations. The seining station number 2 was abandoned when high water made collections here impossible. A total of 19 species and 1,142 specimens were taken. The most numerous species in the seine collections was Bluegill sunfish followed by Largemouth bass and Plains red shiner.

The comparison of the catch of game and rough species is given in Table 3. All catfishes are included in the game fishes since they are so regarded in this vicinity and are much sought after by the local fisherman. The predominance of rough fish in the catch is quite marked since of the 1,464 specimens taken 71.17% were rough fish and 79.39% of the 1,518.52 pounds were of these less desirable species.

In Table 4 the results of the netting of Possum Kingdom are given in terms of the success by months in number and pounds of fish taken per 100 feet of net set. The 120 nets set totaled 12,675 feet and took 1,466 fish weighing 1,520.05 pounds. The average number of nets set per month was 7.06 and they took a total per month of 86.23 fish weighing 89.41 pounds for an average catch per 100 feet of net of 12.22 fish weighing 12.65 pounds.

The length, weight and coefficient of condition data presented by Table 5, was based on the standard length in millimeters and weight in grams for all specimens taken in net collections.

The monthly variations in the distribution of species in the net catches on Possum Kingdom by both number and weight are shown in Tables 6,7,8, and 9. The gizzard shad provided the largest number of specimens making up 52.6% of the total number of fish caught. Bluegill sunfish were the most numerous game fish making up 10.18% of the total number.

Gizzard shad also make up the greatest weight and percentage of total. They weighed a total of 468.91 pounds for 30.91% of the total catch. Smallmouth buffalo weighed 315.14 pounds and were 20.77% of the total weight. Channel catfish and Largemouth bass weighed 109.05 and 103.45 pounds respectively and make up 7.19% and 6.82% of the total weight.

Table 10 shows the number of each species caught per month in each 100 foot gill net set overnight in Possum Kingdom Lake. Gizzard shad dominated the catch each month and averaged 6.18 for the entire period. Bluegills and Largemouth bass were the predominant game species with 1.34 and .88 average per 100 feet of net set for the entire period.

The results of the examination of stomachs of fish taken in gill nets are presented by Table 11. The examination of 206 stomachs that contained food showed 70 to contain fish or fish remains. The sunfish and frequently catfish had been feeding on algae, usually Najas. This may have been accidental in some cases but the majority contained an amount sufficient to indicate deliberate intent. The one fish containing fish eggs was a small bluegill.

The stocking of Possum Kingdom Lake prior to 1945 is not known since several

fish hatcheries, both State and Federal, stocked this Lake at irregular intervals. The stocking since 1944 is known since the entire stocking has been done by the Possum Kingdom State Fish Hatchery. Table 12 contains the numbers of each species stocked into this lake each of the years 1945 through 1955. The Largemouth Bass have been most heavily stocked as almost 97% of the total stocking was made up of this species.

DISCUSSION AND CONCLUSIONS

The seine samples indicate that the hatch of largemouth bass was rather adequate since they were present in comparatively large numbers at almost every seining station. The production of forage species appears to be adequate to support the game fish population and the physical condition of the game fish taken indicate this to be the case.

The predominance of rough species in the net catches from Possum Kingdom is to be expected since the lake is fourteen years old and the usual history of reservoirs is that the first few years provides the best game fish production. The trend is toward rough species as the lake ages. Possum Kingdom has resisted the affects of age with some success. This is probably due to the extreme fluctuation of the water level which provides many acres of newly inundated vegetation. This has the effect of renewing portions of the lake periodically and provides stimulus for game fish production. Despite the contract netting program that has been in operation on this lake for several years the relative abundance of rough species is quite pronounced.

The success of gill netting in terms of number and pounds of fish caught per month per 100 feet of net set varies with the season and weather conditions (Table 4). The high average number per net corresponds rather closely with the shad catch, while the increase and decrease in weight appear to correspond to the appearance of the buffalo in the catch. (Table 10).

The validity of annulus formation in this area has been found to be open to question and for this reason the taking of scale samples was discontinued. The length, weight and coefficient of condition data has been continued and the physical condition appears to be satisfactory in all species examined. There was little evidence of parasitism or disease. The infrequent occurrence of an apparently cancerous condition in gizzard shad constituted the observations on disease and parasitism.

The distribution of species in the net catch shows the gizzard shad to be the most abundant species in both number and weight since 52.6% of the total number and 30.91% of the total weight were shad. The percentage of the weight provided by each species was more evenly divided than was that of the numbers, since the relative sizes of the species tended to compensate for the superiority in numbers provided by the shad. Buffalo and gar provided 20.77% and 15.15% of the total weights, although they were only 6.08% and 3.55% of the total number respectively. (tables 6,7,8, and 9).

The tendency of fish to regurgitate food when captured in a net together with the rapid rate of digestion at high temperatures prevents the collection of much of the data that might be present at the time of capture. There were only 206 fish that contained food which was recognizable. This constitutes 14% of the net catch. The buffalo, carp, carpsuckers, suckers, and shad that contained food did not contain any recognizable item. The food mass resembled a greenish muck. Algae occurred in the stomachs of 95 fish. There is little doubt that a number of these fish took the algae in the process of feeding on organisms found among the vegetation, but catfish and sunfish had taken Najas in sufficient quantity to indicate a deliberate feeding on this material. The importance of fish in the diet of species taken is indicated by the fact that 70 fish or about 34% of the total containing food had been feeding on fish. The

one stomach that contained fish eggs was that of a bluegill sunfish which may have taken the eggs accidentally.

RECOMMENDATIONS

1. It is recommended that the apparent overabundance of rough species be given careful study to determine means of controlling these species.
2. It is further recommended that the operations of the contract netters be studied in order that more effective use may be made of this method of control of undesirable species.
3. Experimental work on nets, traps etc. is suggested in an effort to make the rough fish removal as efficient as possible.
4. Continuation of the present inventory work is advised in order that data may be obtained that will aid in evaluating the work done with regard to the effect it has on the game fish harvest.

SUMMARY

1. Possum Kingdom is a clear water lake built in 1941 by the Brazos River Conservation and Reclamation District and located on the Brazos River near Graford. It is a multipurpose reservoir built for hydroelectric, irrigation and municipal uses.
2. This lake covers 19,991 surface acres at spillway level and is situated in Palo Pinto, Stephens, Young, and Jack Counties. The lake is long and winding having a 310 mile shoreline.
3. The original vegetation was not removed from the lake basin before flooding and has been augmented by saltcedar and willows that grew up on the margins during the recent drouth and is now inundated.
4. Najas guadalupensis chokes the shallow areas during periods of low water but does not appear to offer any problem when a normal lake level is reached.
5. A total of 33 species was taken in seine and net samples during the 1954-55 segment. Ten species were added to the checklist from the 1953-54 segment and two were not found that were present in the previous checklist. These were Rio Grande tetra and striped mullet. These species were introduced as bait minnows but did not become established.
6. Rough species make up 71.17% of the total number in the net catch and 79.39% of the total pounds. Gizzard shad made up the greatest number and weight of all the species taken. This species composed 52.6% of the total number and 30.91% of the total weight.
7. The most popular food among the 206 fish, whose stomachs contained food, was algae, generally Najas, since 95 or 46% had been feeding on this substance. The next food in relation to the preference shown was fish as 70 or 34% of the fish containing food had consumed fish. Fish eggs were found in only one specimen, a bluegill.
8. Hatchery stocking of this lake prior to 1944 is not known since both State and Federal Hatcheries participated. Since 1944, 97% of the 15,555,652 fish stocked in Possum Kingdom Lake were Largemouth Bass.

Table 1. Checklist of Fishes from Possum Kingdom Lake, June 1, 1954-October 31, 1955.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
1. <u>Lepisosteus platostomus</u>	shortnose gar
2. <u>Lepisosteus productus</u>	spotted gar
3. <u>Lepisosteus osseus</u>	longnose gar
4. <u>Dorosoma cepedianum</u>	gizzard shad
5. <u>Ictiobus bubalus</u>	smallmouth buffalo
6. <u>Carpionodes carpio</u>	river carpsucker
7. <u>Moxostoma congestum</u>	Texas gray redhorse
8. <u>Cyprinus carpio</u>	European carp
9. <u>Notropis oxyrhynchus</u>	sharpnose shiner
10. <u>Notropis fumeus</u>	Southern ribbon shiner
11. <u>Notropis venustus</u>	blacktail shiner
12. <u>Notropis lutrensis</u>	Plains red shiner
13. <u>Notropis deliciosus</u>	Southern sand shiner
14. <u>Notropis atrocaudalis</u>	blackspot shiner
15. <u>Pimephales vigilax</u>	parrot minnow
16. <u>Ictalurus punctatus</u>	channel catfish
17. <u>Ameiurus natalis</u>	yellow bullhead
18. <u>Pilodictus olivaris</u>	flathead catfish
19. <u>Fundulus olivaceus</u>	blackspot topminnow
20. <u>Gambusia affinis</u>	mosquitofish
21. <u>Morone chrysops</u>	white bass
22. <u>Micropterus punctulatus</u>	spotted bass
23. <u>Micropterus salmoides</u>	largemouth black bass
24. <u>Chaenobryttus coronarius</u>	warmouth
25. <u>Lepomis cyanellus</u>	green sunfish
26. <u>Lepomis punctatus</u>	Western spotted sunfish
27. <u>Lepomis microlophus</u>	redeer sunfish
28. <u>Lepomis macrochirus</u>	bluegill sunfish
29. <u>Lepomis auritus</u>	yellowbelly sunfish
30. <u>Pomoxis annularis</u>	white crappie
31. <u>Pomoxis nigromaculatus</u>	black crappie
32. <u>Percina caprodes</u>	Southwestern logperch
33. <u>Aplodinotus grunniens</u>	freshwater drum

Table 2. Species of Fishes Collected by Seining, from Possum Kingdom, by Number of each Species taken each Seining Station, June 1, 1954-October 31, 1955.

FISH SPECIES	1	3	4	5	6	8	9	Total
<u>Dorosoma cepedianum</u>	1	3	4	5	6	8	9	12
<u>Ictiobus bubalus</u>		8	2		1		1	1
<u>Cyprinus carpio</u>		1						1
<u>Notropis oxyrhynchus</u>	1				1	2		3
<u>Notropis fumeus</u>						15		25
<u>Notropis venustus</u>			1	1		53	10	25
<u>Notropis lutrensis</u>			87	5		13		55
<u>Notropis deliciosus</u>						7	5	157
<u>Notropis atrocaudalis</u>	12							12
<u>Pimephales vigilax</u>	3		22	2	10			63
<u>Fundulus olivaceus</u>		1		1			1	37
<u>Gambusia affinis</u>		27		9	3		2	41
<u>Micropterus salmoides</u>	28	72	6	21	62	7	24	213
<u>Lepomis punctatus</u>	17		1	11				36
<u>Lepomis cyanellus</u>	2							2
<u>Lepomis microlophus</u>	14			5	26		25	70
<u>Lepomis macrochirus</u>	82	7	5	51	93	2	40	280
<u>Lepomis auritus</u>	8	13	7	34	20		47	129
<u>Percina caprodes</u>					2			2
Totals	167	129	131	140	366	69	140	1,142

Table 3. A comparison of Game and Rough Species caught in Gill Nets from Possum Kingdom Lake, Texas, June 1, 1954-October 31, 1955.

Total No. Specimens Caught	1467
Total Wt. Specimens Caught (lbs.)	1518.52
Average Wt. Per Specimen (lbs)	1.04
Total Weight of Rough Fish (lbs.)	1205.54
Total Weight of Game Fish (lbs.)	312.98
Total No. of Rough Fish	1043
Total No. of Game Fish	422
Average Wt. Per Rough Fish (lbs.)	1.06
Average Wt. Per Game Fish (lbs.)	.74
Percent Rough Fish (by weight)	79.39%
Percent Game Fish (by weight)	20.61%
Percent Rough Fish (by number)	71.17%
Percent Game Fish (by number)	28.83%

* All Catfish included in Game Fishes

Table 4. Success of Gill Netting at Possum Kingdom Lake in Terms of Number and Pounds of Fish Caught, June 1, 1954-October 31, 1955.

Month	No. of Net Sets	No. Ft. Net Sets	No. Fish Caught	No. Lbs. Fish Caught	Avg. No. Fish per net	Avg. No. Fish per 100' Net	Avg. No. Lbs Fish per net	Avg. No. Lbs. Fish per 100'
June	5	600	73	78.28	14.4	12.0	15.66	13.05
July	8	925	78	113.80	9.7	8.6	14.23	12.30
August	6	600	73	65.30	12.2	12.2	10.88	10.88
September	8	850	63	38.23	7.9	7.4	4.78	4.50
October	8	900	54	46.91	6.7	6.0	5.86	5.21
November	5	575	17	32.36	3.4	3.0	6.47	5.63
December	6	725	56	71.15	9.3	7.7	11.86	9.81
January	3	300	33	63.90	11.0	11.0	21.30	21.30
February	11	1125	87	83.19	7.9	7.8	7.56	7.39
March	10	1125	240	156.38	24.0	21.3	15.64	13.90
April	8	875	66	90.96	8.3	7.5	11.37	10.40
May	8	900	150	216.59	18.8	16.7	27.07	24.07
June	6	625	62	53.60	10.3	9.9	8.94	8.58
July	8	850	45	72.40	5.5	5.4	9.05	8.52
August	8	700	48	37.40	6.0	6.9	4.67	5.34
September	8	700	251	240.40	31.4	35.8	30.05	34.34
October	4	300	70	59.20	17.5	23.3	14.81	19.75
Totals	120	12,675	1,466	1,520 05	204.3	201.6	220.20	214.97
Monthly Av.	7.06	745.58	86.23	89.41	12.01	11.86	12.95	12.65

Table 5. Length, Weight, and Coefficient of Condition of Fish Collected by Gill Nets from Possum Kingdom Lake--
June 1, 1954--October 31, 1955

Species	Total No.	Std.		Length Av.	Weight (gm)		Weight Av.	K Range	K Average
		Length	Range		Range	Weight			
<u>L. productus</u>	9	409	780	530	417	2495	976	.536-.70	.66
<u>L. osseus</u>	52	230	1140	786	496	5783	2059	.82-3.02	2.2
<u>D. cepedianum</u>	795	115	440	222	25	510	237	2.28-4.10	3.6
<u>I. bubalus</u>	96	162	440	348	152	2835	1503	1.05-3.80	2.9
<u>C. carpio</u>	80	240	377	293	255	1247	724	2.0-2.97	2.6
<u>Cy. carpio</u>	23	225	450	316	330	2013	882	1.35-2.50	2.1
<u>I. punctatus</u>	56	198	550	352	123	2863	913	1.48-1.48	1.48
<u>P. olivaris</u>	1	410	410	410	1021	1021	1021	1.85-2.89	2.6
<u>M. chrysops</u>	31	147	300	266	80	680	488	2.49-2.49	2.49
<u>M. punctulatus</u>	1	300	300	300	680	680	680	1.8-3.40	2.9
<u>M. salmoides</u>	75	167	470	280	102	2920	627	2.88-5.20	4.2
<u>L. microlophus</u>	165	90	150	133	24	193	98	2.88-5.20	3.4
<u>L. macrochirus</u>	16	110	170	148	45	175	112	2.44-2.98	2.71
<u>C. coronarius</u>	2	161	170	166	145	170	158	2.78-4.85	4.2
<u>L. auritus</u>	14	120	150	138	84	145	111	2.15-4.9	2.8
<u>P. annularis</u>	42	125	260	187	59	458	185	2.66-3.20	3.6
<u>P. nigromaculatus</u>	3	127	230	173	54	379	189	2.03-2.35	2.2
<u>A. grunniens</u>	17	145	240	196	68	318	170		

Table 6. Species Distribution in Net Catch by Number in Possum Kingdom Lake-June 1, 1954-October 31, 1955.

Month	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Total
<u>L. platostomus</u>												1						1
<u>L. productus</u>										4								4
<u>L. osseus</u>	5	2	2		3	4				6	4	25	1	2		1		8
<u>D. cepedianum</u>	27	43	49	19	41	9	33	17	73	170	42	64	34	8	19	79	43	770
<u>I. bubalus</u>	5	9	2	2	3	3	14	9	1	1	4	5	2	8	2	20	3	90
<u>C. carpio</u>	1					3	2		6	11	3	8	3	4	7	24	7	79
<u>Cy. carpio</u>	3			3			1	2	1		1	5	1		1	4	4	26
<u>I. punctatus</u>	10	4	5	3	1		3			6	2	6	3	2	3	4	1	53
<u>A. natalis</u>															1			1
<u>P. olivaris</u>															1			1
<u>M. chrysoops</u>	2	2	1	1	3	1				3	2	12	1			7	2	37
<u>M. punctulatus</u>										1								1
<u>M. salmoides</u>	5	2	6	9	2		2	4	4	5	5	1	1	2	8	43	4	103
<u>C. coronarius</u>				1	1											1		3
<u>L. microlophus</u>	2			2												5		16
<u>L. macrochirus</u>	11	9	4	8				1	1	30	3	3	1	17	3	31	3	149
<u>L. auritus</u>				7									9					14
<u>P. annularis</u>	2	6	2	7			1						5	2				38
<u>P. nigromaculatus</u>		1		7									1					3
<u>A. grunniens</u>				1												16		17
<u>M. congestum</u>																		1
Total	73	78	73	63	54	17	56	33	87	240	66	150	62	45	49	251	70	1467

Table 8. Species Distribution in Net Catch by Weight in Possum Kingdom, June 1, 1954-October 31, 1955.

Month	June	July	August	September	October	November	December	January	February
Species	Wt.	Wt.	Wt.	Wt.	Wt.	Wt.	Wt.	Wt.	Wt.
<i>I. platostomus</i>									
<i>I. productus</i>									
<i>I. osseus</i>	22.36	8.19	14.24		10.63	23.50			
<i>D. cepedianum</i>	12.57	61.25	22.79	8.48	16.00	2.12	11.80	14.12	53.39
<i>I. bubalus</i>	8.70	30.53	7.68	4.84	7.75		49.00	38.25	4.94
<i>C. carpio</i>	1.25					5.62	1.91		15.56
<i>M. congestum</i>									
<i>Cy. carpio</i>	4.56			4.40			4.06		1.56
<i>I. punctatus</i>	15.11	7.04	11.93	5.88	1.75		2.02		
<i>A. natalis</i>									
<i>P. olivaris</i>									
<i>M. chrysoops</i>	1.32	2.10	.75	.18	3.34	1.12			
<i>M. punctulatus</i>									
<i>M. salmoides</i>	6.85	1.45	6.10	7.12	7.31		2.07	7.07	7.55
<i>C. coronarius</i>				.37					
<i>I. microlophus</i>	.70			.52					0.11
<i>I. macrochirus</i>	2.65	1.41	.76	1.70	.13				0.08
<i>I. auritus</i>									
<i>P. annularis</i>	1.38	1.87	.63	1.56					
<i>P. nigromaculatus</i>	.83			3.06			.29	1.02	
<i>A. grummiens</i>				.12					
Total	78.28	113.84	64.88	38.23	46.91	32.36	71.15	63.90	83.19

Table 9 (continued)

Month Percentage Species	March %	April %	May %	June %	July %	August %	September %	October %	Total %
<i>I. platostomus</i>	5.31		1.61					5.14	.23
<i>I. productus</i>	13.31	17.46	43.46	15.95	11.39	29.41	1.18	5.14	.94
<i>I. osseus</i>	59.11	37.79	18.76	38.57	11.39	29.41	4.97	30.83	15.15
<i>D. cepedianum</i>	2.44	13.13	8.05	8.16	68.22		16.89	14.23	30.91
<i>I. bubalus</i>	4.44	3.85	5.34	8.50		29.09	28.86	18.39	20.77
<i>C. carpio</i>						1.01	18.62		7.71
<i>M. congestum</i>						11.87			.03
<i>Cy. carpio</i>		4.54	5.68			8.18	2.46	6.23	3.20
<i>I. punctatus</i>	4.83	5.77	7.10	16.55	8.71	8.18	5.40	9.88	7.19
<i>A. natalis</i>									
<i>P. olivaris</i>						6.01			.15
<i>M. chrysops</i>	1.68	2.40	6.90	1.75			.57	4.05	2.20
<i>M. punctulatus</i>	.96		.78					8.60	.10
<i>M. salmoides</i>	2.64	14.57		1.97	1.98	4.51	12.51		6.82
<i>C. coronarius</i>							.13		.05
<i>I. microlophus</i>	.16		.29	.70	.34		.64		.29
<i>I. macrochirus</i>	4.72	.48	2.02	4.30	7.33	6.84	3.16	.96	2.44
<i>I. auritus</i>				2.79					.20
<i>P. annularis</i>	.20			.70	1.98	3.02	1.82	1.68	1.11
<i>P. nigromaculatus</i>									.08
<i>A. grunniens</i>	.20						2.79		.43
Total	100.00	100.00	99.99	100.00	100.00	100.00	100.00	99.99	100.00

Table 10. Number of Each Species Caught Per Month Per 100 Feet of Gill Net (set overnight) in Possum Kingdom Lake, June 1, 1954-October 31, 1955.

Species	June	July	August	September	October	November	December	January	February
No. 100' Nets	6	9.25	6	8.50	9	5.75	7.25	3	11.25
<i>L. platostomus</i>									
<i>L. productus</i>									
<i>L. osseus</i>	.8	.2	.3						
<i>D. cepedianum</i>	4.5	4.6	8.2	2.2	4.6	1.6	4.5	5.7	6.5
<i>I. bubalus</i>	.7	1.0	.3	.2	.3		1.9	3.0	.1
<i>C. carpio</i>	.2					.5	.3		1.0
<i>M. congestum</i>									
<i>Cy. carpio</i>	.5						.1	.7	
<i>I. punctatus</i>	1.7	.4	.8		.1		.4		.1
<i>A. natalis</i>									
<i>P. olivaris</i>									
<i>M. chrysops</i>	.4	.2	.2		.3	.2			
<i>M. punctulatus</i>							.3		
<i>M. salmoides</i>	.8	.2	1.0	1.0	.2			1.3	.4
<i>C. coronarius</i>				.1					
<i>L. microlophus</i>	.4			.2					
<i>L. macrochirus</i>	1.7	1.0	.7	.9	.1				.1
<i>L. auritus</i>			.3	.8					
<i>P. annularis</i>	.4	.6	.3				.1	.7	
<i>P. nigromaculatus</i>		.1	.2					.3	
<i>A. grummiens</i>									
Total	12.1	8.3	12.8	6.5	5.9	3.0	7.6	11.7	8.3

Table 10. (continued)

Species	No. 100' Nets											
	March	April	May	June	July	August	September	October	Av. for Period			
L. Platostomus												
L. productus	.4	.5	2.8	.2	.8		.1	.3	.09			
L. ossius	.5	4.8	7.7	5.4	1.9	2.7	.6		.41			
D. cepedianum	15.1	.5	.6	.3	2.4	.3	11.3	14.3	6.18			
I. bubalus	.1	.3	.9	.5	.5	1.0	2.9		.86			
C. carpio	.5	.1	.6	.2	.5	.1	3.4	2.3	.68			
M. congestum												
Cy. carpio		.1	.7	.5	.5	.4	.6	1.3	.28			
I. punctatus	.5	.2	.2	.2	.5	.4		.3	.44			
A. natalis												
P. Olivaris												
M. chrysops	.3	.2	1.3	.2		.1	1.0	.7	.01			
M. punctulatus	.1	.6	.1	.2	.2	1.1	.1	1.3	.88			
M. salmoides	.4	.3	.3	.2	.2	.4	.1		.01			
C. coronarius												
L. microlophus	.1	.3	2.2	1.4	.2	.4	.7	1.0	.13			
L. macrochirus	2.7	.3	.8	.8	3.3	.4	4.4		1.34			
L. auritus									.11			
P. annularis	.1			.2	.3	.3	1.7	.7	.36			
P. nigromaculatus	.1					.1	2.3		.04			
A. grunniens									.14			
Total	20.9	7.5	16.7	7.1	10.2	6.5	35.8	22.2	12.26			

Table 11. Frequency of Occurrence and Number of Food Organisms from Stomachs of Fish taken in Gill Nets, from Possum Kingdom Lake, Texas, June 1, 1954-October 31, 1955.

<u>Food Items</u>	<u>Frequency of Occurrence</u>	<u>Total no. Identified</u>
Algae	95	
Cotton Seed Cake	1	1
<u>Odonate Larvae (Dragonfly)</u>	2	2
<u>Orthoptera (Grasshoppers)</u>	15	18
<u>Coleoptera (Beetles)</u>	18	25
<u>Hymenoptera (Wasps and Ants)</u>	3	51
Crayfish	2	2
Gizzard Shad (<u>D. cepedianum</u>)	1	1
Spottail Shiner (<u>N. venustus</u>).	2	2
<u>Channel Catfish (I. punctatus)</u>	8	11
<u>White Crappie (P. annularis)</u>	2	2
<u>Logperch (Percina Caprodes)</u>	1	5
Unidentifiable Fish Remains	54	54
Unidentifiable Fish Eggs	1	1
Total	206	

* Insects identified to Order, higher forms to Species.

Table 12. Stocking of Fish in Possum Kingdom Lake, Texas, Since 1945.

Year	SPECIES PLANTED						Total
	Bass	White Crappie	Black Crappie	Channel Cat	Warmouth	Sunfish	
1945	2,190,000						2,190,000
1946	1,934,000						1,934,000
1947	3,665,000	35,000		51,500	10,000	265,000	4,026,500
1948	2,023,000			7,000			2,030,000
1949	200,000						200,000
1950	2,200,000						2,200,000
1951	205,950			38,150		30,000	274,000
1952	235,497						235,497
1953	970,555						970,555
1954	754,000						754,000
1955	701,000			40,000			741,000
<u>Totals</u>	15,079,002	35,000		136,650	10,000	295,000	15,555,652

