SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

Raymond Gary LAKE

State: Oklahoma

Project Title: Raymond Gary Management Survey Report

Period Covered: 2025

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Raymond Gary

ABSTRACT

Largemouth Bass continue to do very well in Raymond Gary with many larger fish present in the population and high numbers of fish overall. Staff noticed that Relative Weight was good but slightly lower than ideal. Fishing should improve over the next two years. Crappie catch rates were low but do provide an additional species to pursue. It was noted during trap netting that the Redear Sunfish and Bluegill do extremely well and anglers would have great stringers of large fish if they pursued them in Raymond Gary. Channel Catfish numbers were low and will be monitored next sampling with both gill nets and hoop nets to confirm if numbers are indeed low or just an artifact of timing or sampling method.

INTRODUCTION

Lake Raymond Gary is fed by surface runoff. It is located 1.6 km east of Ft. Towson in Choctaw County, Oklahoma. Raymond Gary covers 107 surface hectares and was constructed in 1956 by the Oklahoma Department of Wildlife Conservation (ODWC). Raymond Gary Lake has a mean depth of 1.9 m and a maximum depth of 6.6 m, a shoreline development ratio of 4.4, and a secchi disc visibility of around 45 cm in the main pool in August. Turbidity is primarily from plankton. Fish habitat consists primarily of aquatic vegetation, rip rap along dam and artificial fish habitat structures. Major fisheries include black bass, crappie, channel catfish and bluegill sunfish.

RESULTS

Largemouth Bass

Largemouth Bass catch per unit effort (CPUE) was the highest recorded since sampling procedures changed from 15 minute transects to 10 minute transects post 2009 (table 1). While the number of preferred size fish dropped slightly the number of quality size fish has increased significantly with the most common size fish occurring at 320-340mm (table 2, Figure 1). Most surprisingly, trophy sized individuals were collected in back to back

samples which rarely happens even in trophy lakes like Broken Bow and Cedar Lake (table 2). IT was noted during the survey that Largemouth Bass numbers and presence of the larger individuals were not uniformly distributed across the lake despite adequate habitat but randomly encountered often in shallow portions of the lake near cattails that had either other submerged aquatic vegetation or structural habitat. Supplemental sampling found high numbers of larger fish not analyzed in this standard data set on the west shore of the lake south of the rail road where the shore cuts west and has several downed trees. Additional larger fish were sampled in the cove on the opposite shore approximately 113 degrees from the first spot, and another cove approximately 400 meters south of the first cove. Proportional stock density (PSD) was very high in 2025 (table 3). Based on the size structure of Raymond Gary Largemouth Bass population, the fishing should rank in the top bass fishery given the number of larger size fish and the lakes smaller size resulting in higher likelihood of anglers encountering these fish. Relative weight (Wr) a measurement of fish condition was good but slightly below the ideal 95-105 goal (table 4). Fish condition should continued to be monitored to ensure this does not drop. Mean length at age remains relatively steady, with bass growing quickly (table 5). Mean weight at age has improved since 2000 (Table 6). Based on the age frequency histogram, most fish are 3 years old but all ages were sampled up to age 8 (Figure 2). Fishing quality should improve for the next two years as these fish move through the system. Largemouth Bass growth is very good based on the Von Bertalanffy metrics (table 7). Mortality estimates have dropped between 2020 to 2025 from 46% to 36%, respectively (Table 8). This is likely due to the number of older individuals sampled in 2025.

Crappie

Few crappie were collected despite matching sampling SSP for trap nets. Raymond Gary appears to have a system dominated by bluegill and redear which overshadow its crappie population. Crappie were sampled up to memorable size but most were smaller fish. It was also noted that the relative weight was low for crappie.

Channel Catfish

Despite setting 5 gill nets very few channel catfish were collected. Historically, this lake has been heavily stocked. Future catfish sampling will focus on comparing hoop net and gill net catch rates as well as implementation of spawning boxes following conclusion of lab research project.

Recommendations

1. Continue to monitor Largemouth Bass with special attention to Relative weights. Consider additional management techniques to maintain trophy fish.

2. Evaluate Redear Sunfish in in Raymond Gary.
3. Compare catch rates of Channel Catfish between Gill net and Hoop nets.

Table 1: Largemouth Bass Catch Per Unit Effort (CPUE) by year.

Total CPUE	2000	2002	2009	2020	2025
Mean	136	98	46.67	51	60
Count	1	1	6	6	6
SE	.	.	8.92	6.34	6.93
L 95% CI	.	.	29.17	38.57	46.42
U 95% CI	.	.	64.16	63.42	73.58

Table 2: Largemouth Bass CPUE by size class across time.

CPUE Size	2000		2002		2009		2020		2025	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Substock	.	.	.	.	5.33	1.98	3	2.04	3	1.34
Stock	.	.	.	.	16.67	3.92	10	2.96	11	2.86
Quality	.	.	.	.	13.33	3.82	10	2.52	22	3.69
Preferred	.	.	.	.	8.67	1.91	25	6.64	21	4.02
Memorable	.	.	.	.	2.67	1.69	2	1.26	3	2.05
Trophy	.	.	.	.	.	.	1	1	1	1

Table 3: Largemouth Bass proportional Stock Density by year.

PSD	2000	2002	2009	2020	2025
PSD	65	82	60	79	81
PSD-P	47	36	27	58	42
PSD-M	6	9	6	6	5
PSD-T	.	.	.	2	.
PSD S-Q	35	18	40	21	19
PSD Q-P	18	45	32	21	39
PSD P-M	41	27	21	52	37
PSD M-T	6	9	6	4	5

Table 4: Largemouth Bass Relative Weight with standard errors across PSD classes by year.

Wr	2000		2002		2009		2020		2025	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Substock	.	.	472.27	389.86	110	20.83	94.17	.	87.54	1.28
Stock	87.61	3.53	92.59	1.77	91.32	1.92	90.41	1.77	88.15	2.2
Quality	90.95	4.6	89.95	1.2	90.68	1.03	94.13	4.2	93.98	2.05
Preferred	99.02	4.59	88.84	2.29	90.59	3.53	92.99	1.41	93.72	1.81
Memorable	99.7	.	87.6	2.64	93.68	2.1	55.36	28.9	93.2	3.28
Trophy	.	.	.	.	.	.	26.03	.	.	.
Total	93.61	2.62	111.76	22.09	92	1.41	89.82	2.22	92.5	1.12

Table 5: Largemouth Bass Mean length at age with standard errors.

Mean Length at Age	2000		2002		2009		2020		2025	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
1	.	.	.	.	.	.	133	25.23	161	.
2	.	.	.	.	.	.	243.1	7.55	235.1	13.74
3	.	.	.	.	.	.	345.66	14.43	337.42	6.64
4	.	.	.	.	.	.	377.54	4.96	405.17	8.76
5	.	.	.	.	.	.	463	13.5	440	8.03
6	.	.	.	.	.	.	442.25	6.01	510	.
7	.	.	.	.	.	.	.	.	494.17	8.28
8	.	.	.	.	.	.	.	.	508.5	13.5
9	.	.	.	.	.	.	470	.	.	.
10	.	.	.	.	.	.	605	.	.	.

Table 6: Largemouth Bass Mean weight at age with standard errors.

Mean Weight at Age	2000		2002		2009		2020		2025	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
1	.	.	.	.	.	.	31.33	17.67	44	.
2	.	.	.	.	.	.	178.1	18.37	167.8	25.68
3	.	.	.	.	.	.	524	79.25	538.33	35.59
4	.	.	.	.	.	.	779.45	39.59	978.67	89.79
5	.	.	.	.	.	.	1471.5	122.47	1165	77.21
6	.	.	.	.	.	.	1260.75	59.49	1940	.
7	.	.	.	.	.	.	.	.	1992.5	82.76
8	.	.	.	.	.	.	.	.	2096	226
9	.	.	.	.	.	.	1608	.	.	.
10	.	.	.	.	.	.	3182	.	.	.

Table 7: Largemouth Bass Von Bertalanffy metrics.

Von Bert	2000	2002	2009	2020	2025
L inf	.	.	.	542.55	552.456
K	.	.	.	0.3	0.349
t0	.	.	.	0.0463	0.313

Table 8: Largemouth Bass mortality estimates.

Mortality Table	2000	2002	2009	2020	2025
Instantaneous	.	.	.	0.62	0.45
Annualized	.	.	.	46.69	36.4

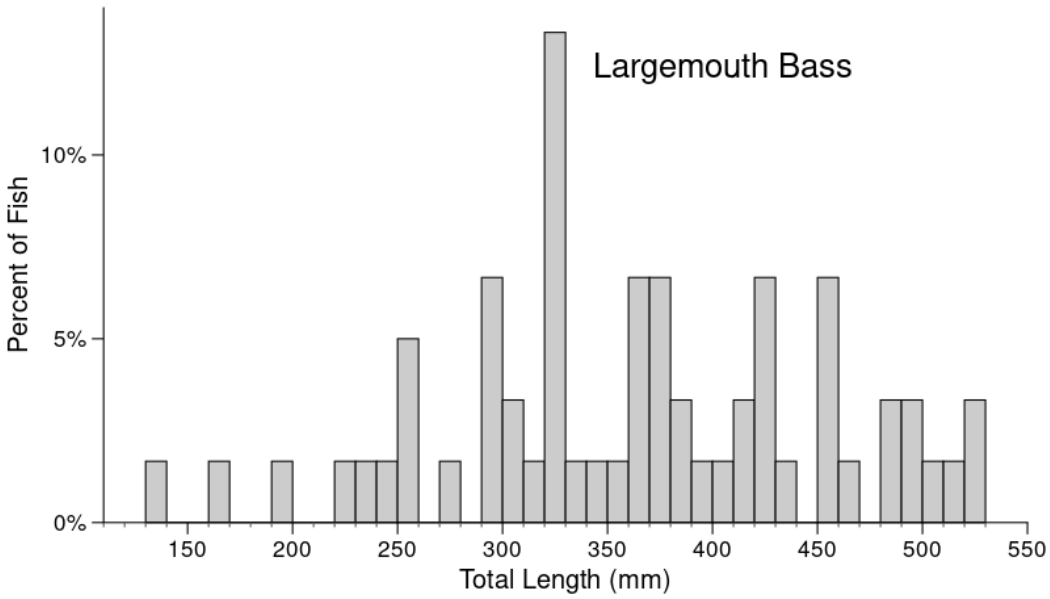

Figure 1: Largemouth Bass age frequency histogram.

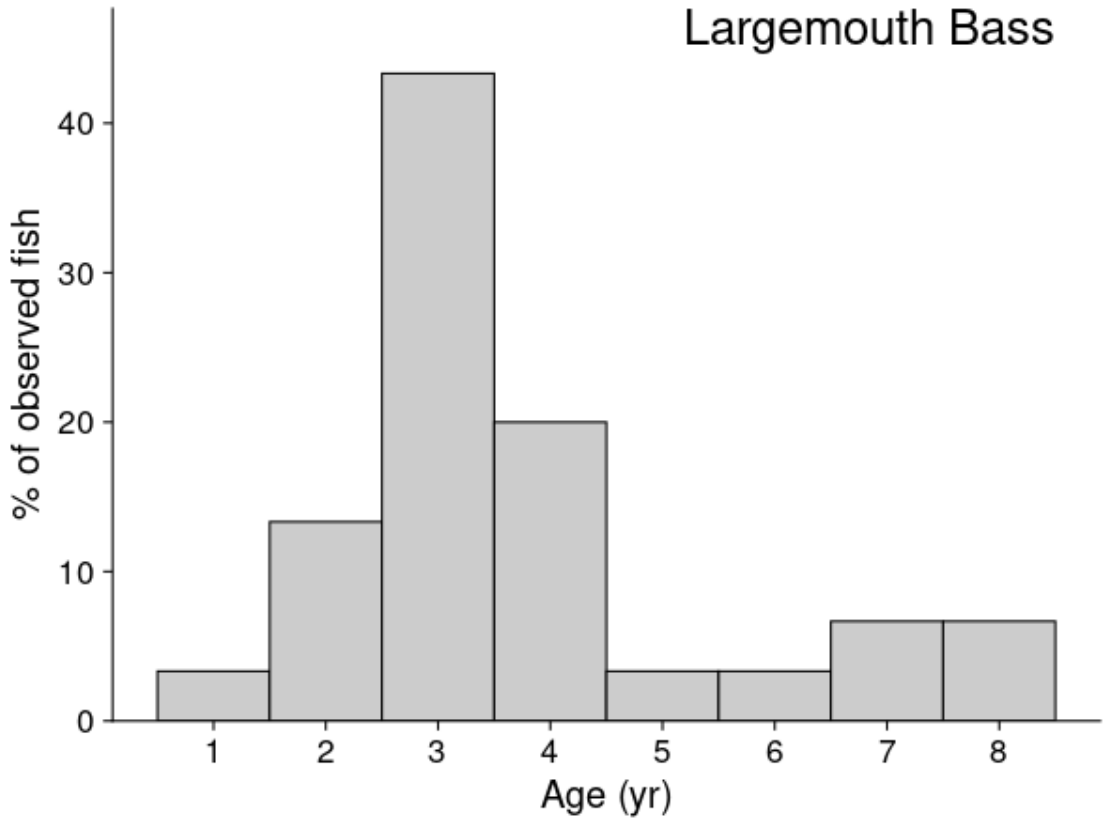

Figure 2: Largemouth Bass age frequency histogram.