

OKLAHOMA COMMERCIAL FISHERIES HARVEST SUMMARY 1961-1969

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The Oklahoma Commercial Fishing Harvest Survey, which has provided annual harvest data since 1957, was the source of the data on statewide commercial fishing annual harvest, by lake and by species, presented here for the period of 1961-1969. Wholesale fish prices received by Oklahoma commercial fishermen in 1968 are discussed and compared with those of 1958 and 1963.

The Oklahoma Commercial Fishing Harvest Survey was initiated in 1957 and continued through 1960 by Elkin (1) and Jones (2). Data collections for this report were made by Jones for the period 1961 through May, 1967, and by this author for the period June, 1967 through 1969.

Commercial fisheries harvest data are obtained directly from monthly catch reports submitted by commercial fishermen. These reports, which are required by law, list numbers, pounds, species, and average price per pound for fish caught and marketed. Commercial fishermen's reports were corroborated by spot-check interviews.

The catch report system was described by Jones as "only fair" in the years 1958, 1959, and 1960. Parrack, Brown, and Mensinger (3), reporting on the period July 1, 1967 through June 30, 1968, concluded that accurate reporting could be obtained if personal interview contact was kept on a regular basis.

COMMERCIAL FISHING METHODS

Recently, the commercial harvest of rough fish in Oklahoma has been conducted with gill and trammel nets. Gill net methods employed are variations of stationary mid-water or bottom sets. Both gill nets and trammel nets are used to a minor degree for open water "whip" or driving sets. Hoop nets and variations of hoop nets with leads were once used very effectively, but present legislation makes this gear-type impractical. Seines and other gear types are permitted only under special contract management operations.

Fishing effort per individual fisherman varied from 300 ft to 20,000 ft of net per night. According to Parrack et al. (3),

estimates of catch per unit effort also varied by each lake, fisherman, and season.

Jones (2) estimated that approximately 50% of commercial fishermen earned their total income by fishing. Full-time fishermen, in 1968, were estimated to be less than 25% of those so employed.

ANNUAL HARVEST

Annual harvest rates are presented by species in Table 1. The harvest of 1968 showed an increased rate of over 250% when compared to the harvest of 1961. The harvest of buffalo, predominantly bigmouth and smallmouth, was annually larger than for any other species. Buffalo are also the species for which most fishermen direct the greatest effort on a year-round basis.

The 1965 harvest, largest on record, shows species high totals for carp and gar. Carpsucker and freshwater drum also contributed significantly to the total harvest. However, a large segment of the 1965 catch was of little or no value, whereas the smaller 1968 harvest had a record high catch of the highly-valued buffalo and flat-head catfish.

The 1964 harvest of paddlefish was the highest for the survey period. Fort Gibson, Markham Ferry, and Grand are the only lakes having sustained populations of paddlefish.

Wide annual variations are exhibited in the harvest of white bass. The range of approximately 4,000 to 24,000 pounds can be explained in part by the short harvest period. If weather conditions are unfavorable in January and February, the white bass harvest may be limited. The effects of restrictive regulations are also important to the harvest of these species.

Variations in annual harvests of species and harvest totals may reflect one or a combination of several factors. Some of the factors affecting harvest are weather, legislation or regulations, numbers of fishermen, and areas fished. Table 2 presents data on some of these conditions. The acreages shown in the table are total surface acres of the lake. Within a given lake, some areas are often closed to avert sport fishing pressure conflicts. There is also a large segment of the lake closed by the "100 yard from shore and 4 feet under" law.

These data also illustrate the effects of regulations and the interaction of many factors. Liberalization in laws instituted in 1963 may have contributed to an approximate 25% increase in harvest per man in 1964. With the impoundment of Eufaula and Markham Ferry and the reopening of Tenkiller to commercial fishermen, the water open to commercial fishing nearly doubled. Harvest per acre declined, but harvest per fisherman was at a high. The entire industry picture looked attractive, and during 1965 both harvest and total number of fishermen reached a peak.

A trend toward restrictive or limiting legislation began in 1965 and generally continued through 1969. The relatively stable numbers of fishermen were condensed into fewer fishing acres, and the harvest per acre rose. The 1968 harvest per acre was further accentuated by the opening of the spring season on all lakes except Grand. The closure of Texoma in 1969, effective January 1, 1970, caused a decrease in fishermen reporting procedures and, hence, the low 1969 report.

HARVEST EVALUATION

Although the nation's economy has experienced steady inflation, this trend is little reflected in the wholesale price of fish. Table 3 compares average wholesale prices in 1958, as reported by Jones (2), 1963 (Jones, unpublished), and 1968. These values are recorded for fish in the field-dress condition, with entrails only removed. White bass are marketed in the rough (not dressed).

Only one price difference, a 5¢ increase in flathead catfish, exists between the 1958 and 1963 prices. The slight rise in 1968 value of carp may be deceiving. The price

shown is the average price per pound received for only the carp marketed. Approximately 60% of the carp harvested were marketed. The average price per pound for all carp harvested would fall below 5¢.

A strong consumer preference and steady market demand for flathead catfish is reflected in the 14¢ per pound increase since 1958. The commercial fisheries harvest of flathead increased more than 100% during this period due to favorable market conditions and the opening of additional waters.

During the last few years, river carpsuckers have entered the market. In 1968, 85% of the river carpsucker harvested were marketed. Another surprising newcomer was gar. Only 10% of harvested gar were marketed, but they brought an average of 13¢ per pound.

The 1958 harvest was valued at \$45,432. The average income per licensee due to commercial fishing was \$540. The harvest value increased to \$65,396 in 1963, and \$1,130 became the average income per licensee. The 1968 harvest was valued at \$148,941. Eighty-two of the licensees averaged \$1,820. Although far below national average income figures, the Oklahoma average commercial fishing income figures show a very significant increase between 1958 and 1968.

The 1968 harvest was the most valuable Oklahoma harvest on record. It was, however, not the largest, but it recorded totals of the more valuable species, flathead catfish and buffalo. Commercial fishermen are becoming more proficient at catching these species, and they are occupying less of their time with low value carp, gar, and drum.

HARVEST BY LAKES

Tables 4, 5, and 6 indicate the annual harvests by species for each lake fished. Comparisons of harvests between lakes or between species within a lake are subject to annual fluctuations due to factors indicated previously. Over the years, the bulk of the harvest has been derived from very few reservoirs. From 1961 through 1964, 90.7% of the total harvest came from Lakes Fort Gibson, Grand, and Texoma. From 1964 through 1968, 88.1% of the total harvest was drawn from Lakes Fort Gibson, Grand, Texoma, and Eufaula.

TABLE 1. Total annual commercial fishing harvest, in pounds, 1957 through 1969.

Year	Buffalo	Carp	Flathead Catfish	Drum	Paddlefish	River Carpsucker	White Bass	Gar	Total
1957	298,646	187,720	71,970	16,514	3,839	6,751	2,343	55,833	643,616
1958	156,918	119,522	50,174	12,141	3,233	11,861	4,467	61,393	419,802 ^a
1959	153,867	197,219	58,155	13,831	3,646	7,883	10,611	81,338	526,550
1960	111,599	109,308	55,943	18,385	6,068	4,979	26,691	52,001	384,974
1961	144,960	95,463	55,471	23,900	5,562	2,301	13,207	46,834	387,703
1962	222,710	96,601	53,631	28,800	8,743	31,169	11,415	80,238	533,316
1963	222,313	102,466	49,449	38,296	7,784	48,386	23,962	37,968	530,624
1964	382,152	139,492	68,205	34,761	12,740	100,575	14,652	98,317	850,894
1965	480,869	222,516	88,946	28,498	2,829	119,174	6,473	108,118	1,057,424
1966	429,555	146,838	80,629	19,657	4,856	158,662	5,684	61,662	907,543
1967	436,041	151,272	86,167	19,558	8,766	129,638	4,434	39,564	975,440 ^b
1968	565,290	160,413	106,236	13,706	6,976	90,980	6,659	35,869	985,628
1969	176,096	81,572	75,447	9,567	2,963	28,492	5,369	25,276	404,782

a Total includes 93 pounds blue sucker.

b Total includes 100,000 pounds gizzard shad.

TABLE 2. Vital statistics related to commercial fishing harvest, 1957-1969.

Year	Annual harvest (lb)	Number of fishermen	Acres of water fished	Average harvest per fisherman (lb)	Harvest per acre (lb)	Number of lakes fished	Number of rivers fished
1957	643,616	50	191,080	12,872	3.4	10	3
1958	419,802	84	188,090	4,938	2.2	11	4
1959	526,550	56	193,260	9,403	2.7	11	0
1960	384,974	56	180,760	6,875	2.1	10	0
1961	387,703	56	181,070	6,923	2.1	14	0
1962	533,316	75	176,110	7,111	3.0	10	0
1963	530,624	58	168,950	9,149	3.1	9	0
1964	850,894	69	296,810	12,332	2.9	14	0
1965	1,057,424	90	322,800	11,749	3.3	14	3
1966	907,543	74	328,550	12,264	2.8	14	0
1967	975,440	82	292,850	11,895	3.3	13	0
1968	985,628	82	278,920	12,020	3.5	8	0
1969	404,782	72	279,780	5,622	1.4	8	0

TABLE 3. Average value of commercial fish by species, as reported by commercial fishermen in 1958, 1963, and 1968.

Species	1958		1963		1968	
	Value per lb	Total value	Value per lb	Total value	Value per lb	Total value
Buffalo	\$.15	\$23,538	\$.15	\$33,346	\$.15	\$86,489
Carp	.05	5,976	.05	5,123	.07	6,641 ^a
Flathead Catfish	.25	12,543	.30	14,834	.39	41,752
Drum	.15	1,821	.15	5,744	.12	1,530 ^b
Paddlefish	.20	647	.20	1,556	.21	1,444
River Carpsucker	—	—	—	—	.12	9,125 ^c
Gar	—	—	—	—	.18	4,624 ^d
White Bass	.20	893	.20	4,792	.28	1,498

^a 60% marketed

^b 90% marketed

^c 85% marketed

^d 10% marketed

TABLE 4. Commercial fisheries harvest, in pounds, from rivers, 1961 to 1969.^a

River	Year	Buffalo	Carp	Flathead Catfish	Fresh- water Drum	Paddle- fish	River Carpucker	Gar	White Bass
Arkansas	1964	14,465	14,145	1,437	1,171	286	77	4,470	0
	1965	4,131	4,032	486	212	68	33	1,980	0
Deep Fork	1961	13,702	864	357	51	0	201	994	0
Grand	1964	1,640	2,635	221	233	61	0	0	0
Red	1965	1,461	239	16	545	0	149	0	0
Verdigris	1964	459	745	89	77	23	0	0	0
	1965	7,995	4,984	681	270	38	0	0	0

^a The data reflect only the years for which commercial harvest was reported on a given body of water.

TABLE 5. Commercial fisheries harvest, in pounds, from lakes and reservoirs of less than 500 acres, 1961 to 1969.^a

Lake	Year	Buffalo	Carp	Flathead Catfish	Fresh- water Drum	Paddle- fish	River Carpucker	Gar	White Bass
Claremore City	1961	41	821	78	0	0	45	0	0
	1967	0	650	245	0	0	0	0	0
Cushing City	1963	0	15	592	6	0	0	0	0
Duncan City	1969	60	144	695	0	0	0	0	0
Dunn Private	1967	450	80	21	10	0	0	0	0
Hudson Bartlesville	1967	3,600	950	115	0	0	0	650	0
Long Log	1964	1,200	278	0	63	0	0	0	0
Mohawk - Tulsa	1961	91	916	0	10	0	0	0	0
	1962	100	600	50	0	0	0	0	0
	1963	758	3,015	414	89	0	0	0	0
Morris City	1967	0	5	0	0	0	0	0	0
Pawnee City	1966	0	605	730	0	0	0	0	0
Roebuck	1964	500	0	6	0	0	0	0	0
Sahoma	1965	0	516	328	0	0	0	44	0
Spiro City	1967	1,861	47	0	0	0	0	0	0
	1968	14	0	0	0	0	0	0	0

^a The data reflect only the years for which commercial harvest was reported on a given body of water.

TABLE 6. Commercial fisheries harvest, in pounds, from lakes and reservoirs of 500 or more acres, 1961 - 1969.^a

Lake	Year	Buffalo	Carp	Flathead Catfish	Fresh- water Drum	Paddle- fish	River Carpucker	Gar	White Bass
Bluestem - Pawhuska	1961	5,463	1	0	0	0	0	0	0
	1963	2,390	0	0	0	0	0	0	0
	1964	3,745	1,143	303	113	0	0	0	0
	1965	485	45	0	0	0	0	0	0
	1966	2,205	775	0	0	0	0	0	0
	1967	360	90	0	0	0	0	0	0
Canton	1961	5,033	13	353	202	0	376	0	0
	1962	9,353	57	475	228	0	324	0	15
	1963	7,746	129	228	376	0	31	200	0
	1964	10,141	23	156	95	0	92	101	24
	1965	23,895	286	138	350	0	1,566	243	255
	1966	10,779	271	207	394	0	3,430	223	3,644
	1968	5,469	12	0	43	0	4	48	86
	1969	2,513	70	62	169	0	0	0	2
	Carl Blackwall	1961	0	172	1,273	76	0	12	1,535
1962		0	683	126	0	0	0	0	0
1963		0	715	1,261	126	0	0	0	0

TABLE 6. (Continued)

Lake	Year	Buffalo	Carp	Flathead Catfish	Fresh- water Drum	Paddle- fish	River Carpucker	Gar	White Bass
Chickasha	1965	0	1,728	0	0	0	0	0	0
Eucha	1961	0	2,600	38	0	0	0	0	0
Eufaula	1964	1,198	484	228	22	0	37	498	0
	1965	32,716	23,070	30,646	1,436	0	2,480	25,917	34
	1966	22,937	7,900	41,317	389	0	781	2,591	13
	1967	26,771	9,026	43,339	1,269	0	1,359	5,254	5
	1968	23,890	13,387	54,609	2,235	0	1,002	5,047	18
	1969	47,328	22,438	48,742	2,477	0	1,011	14,849	62
Ft. Gibson	1961	23,644	19,540	12,304	595	586	0	80	2,498
	1962	19,327	20,938	9,146	2,452	394	1,175	793	363
	1963	42,205	23,040	18,641	4,085	922	0	1,852	1,851
	1964	29,438	17,183	9,986	2,017	795	1,643	5,870	277
	1965	30,845	20,159	6,804	1,160	379	0	10,180	171
	1966	13,674	3,320	6,227	267	393	49	68	51
	1967	16,253	7,962	5,210	805	303	839	34	514
	1968	17,740	7,905	9,586	1,016	74	262	0	118
	1969	15,931	7,612	14,203	2,446	250	550	519	757
Grand	1961	40,244	46,649	33,903	22,536	4,976	1,258	40,927	10,709
	1962	43,339	37,334	34,029	24,064	3,349	1,309	64,668	11,046
	1963	50,175	43,412	18,837	31,909	6,862	2,959	21,918	20,237
	1964	63,748	38,138	33,599	24,061	10,867	10,412	35,875	11,987
	1965	18,615	18,767	26,599	10,768	2,219	3,014	4,176	1,877
	1966	26,981	13,602	7,690	2,448	4,231	200	765	1,186
	1967	46,795	24,530	18,563	8,150	8,009	5,733	4,717	3,246
	1968	35,905	10,716	16,786	1,327	5,817	1,350	3,000	3,230
	1969	21,387	7,837	7,258	2,166	2,713	968	57	4,410
Great Salt Plains	1967	0	500	0	20	0	0	0	0
Greenleaf	1961	434	0	135	1	0	0	0	0
	1962	5,222	7,511	985	0	0	0	0	0
	1963	1,151	1,549	474	14	0	0	0	18
	1964	2,679	2,712	413	5	0	6	500	3
	1965	1,067	1,296	259	205	0	0	0	0
	1966	1,878	2,130	1,175	325	0	0	773	0
Hulsh	1961	3,718	85	1,964	0	0	0	0	0
	1962	4,869	1,716	1,826	53	0	0	0	0
	1964	3,855	0	0	0	0	0	0	0
	1965	4,081	2,403	629	22	0	0	0	0
	1966	262	195	57	0	0	0	0	0
Keystone	1965	5	3,900	148	38	0	0	65	0
	1966	1,501	605	1,706	1,588	0	0	0	0
Markham Ferry	1964	17,218	8,001	441	1,210	78	0	0	185
	1965	16,613	15,709	918	767	125	932	1,665	23
	1966	19,570	4,433	6,008	772	232	4,073	1,156	0
	1967	21,881	9,776	6,293	976	454	3,321	21	193
	1968	29,180	9,241	12,078	1,107	1,085	3,650	830	3,125
	1969	439	289	75	69	0	0	0	188
Okmulgee City	1964	51	22	0	41	0	0	0	0
Oologah	1966	1,009	1,247	1,099	3	0	107	817	0
Ponca City	1961	0	708	302	78	0	96	0	0
	1962	0	887	616	184	0	0	0	0
Tenkiler	1964	23,628	5,000	12,193	100	0	1,400	5,400	1,600
	1965	13,502	4,995	4,861	355	0	630	3,147	4,313
	1966	9,070	2,640	1,087	50	0	325	0	790
	1967	3,113	1,105	652	122	0	64	0	0
Texoma	1961	52,184	22,430	4,764	351	0	813	3,298	0
	1962	135,621	26,288	6,378	1,745	0	29,261	14,577	0
	1963	117,888	30,591	9,002	1,691	0	45,396	13,998	2,856
	1964	224,322	66,396	10,831	7,034	0	86,756	50,044	676
	1965	323,318	116,468	16,362	12,362	0	110,370	58,768	0
	1966	319,609	109,101	13,346	13,421	0	149,697	55,269	0
	1967	314,957	96,551	11,729	8,206	0	117,322	23,888	476
	1968	440,940	118,192	13,137	7,973	0	84,712	22,896	82
	1969	81,245	35,477	3,846	1,915	0	25,963	5,881	0

TABLE 6. (Continued)

Wister	1981	406	664	0	0	0	0	0	0	0
	1962	4,879	587	0	74	0	0	0	200	0
	1964	429	112	49	0	0	229	0	229	0
	1965	1,399	3,919	72	8	0	0	0	2,905	0
	1966	80	0	8	10	0	0	0	0	0
	1968	1,152	960	40	0	0	0	0	608	0
	1969	7,189	7,705	563	325	0	0	0	4,020	0

^a The data reflect only the years for which commercial harvest was reported on a given body of water.

DISCUSSION

An increase in the annual commercial fishing harvest could be brought about by any one or a combination of factors discussed above, *e.g.*, opening additional acreage, additions of fishermen, or relaxing restrictive regulations. The converse would also be true.

From an economic standpoint, an industry producing 980,000 pounds of fish at a value of \$149,000, as in 1968, is substantial. However, existing market capacities for most species except flathead catfish are met during certain periods each year. Some species, such as carp, carpsucker, and gar, are not fully marketed at present harvest levels. With the rapid expansion of the fish farming industry of channel catfish, the market pressure for the flathead may be relieved or displaced to a great extent. The flathead harvest in 1968 accounted for 28% of the value of the industry. Expansion of the industry value

may then be difficult without development of new markets and varied fishery products.

Total fishery resource management may dictate the use of new and more efficient commercial fishing gear-types and methods with complete regard for the status of all game fish species. The potential of the Oklahoma fisheries resource is undisputed. The harvest means have been disputed, but the challenge of effecting a program to meet the needs of the future has as yet not been met.

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