

WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF FORESTRY, WILDLIFE AND RECREATION

BUREAU OF FISH AND WILDLIFE MANAGEMENT  
Administrative Report Number 3

December, 1973

Lake Michigan - State of the Fishery

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

L. P. Voigt  
Secretary

BOX 450  
MADISON, WISCONSIN 53701

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FISH MANAGEMENT ADMINISTRATIVE REPORT No. 3

Lake Michigan - State of the Fishery

This administrative report has been prepared to evaluate the current state of the commercial fishing industry utilizing Wisconsin waters of Lake Michigan.

Time is running out for the tradition-bound concepts of managing commercial fisheries. Many fish stocks are now either fully exploited or over-exploited; many fishermen now find themselves on the brink of disaster entirely dependent on the success of a few year classes of a single species.

Conflicts between the two major segments utilizing Lake Michigan and its fish stocks, the sport and commercial fisheries, are increasingly vocal. While this administrative report is not meant as a vehicle for resolving these conflicts, it should provide a better understanding of the commercial fishery as an industry vital economically and aesthetically to Wisconsin's Lake Michigan shoreline communities.

By

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December 19, 1973





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LAKE MICHIGAN - STATE OF THE FISHERY

In recent years Wisconsin has licensed approximately 250 persons annually to take part in the commercial fishery on its waters of Lake Michigan. The state of the fishery so generated is not reflected in the status of fish stocks, but rather the well being of the industry created. It is here necessary to reiterate the often quoted statement that the management of such fisheries is intended for the benefit of man rather than fish. At the present time, several of the fisheries thus created are in trouble. The most notable instance is that of the chub fishery on Lake Michigan.

Only 15 licensed commercial fishermen have annually reported catches valued in excess of \$20,000, and of this number, 14 are full-time small mesh gill net fishermen who fish primarily for chubs. It should be evident, therefore, that the chub fishery represents the heart of the commercial fishery on Lake Michigan.

Since 1968, chub production in these waters has declined markedly, dropping from 6.2 million pounds in 1968 to 2.2 million pounds in 1972. Fishery biologists in states adjoining Lake Michigan are in agreement that the numerical abundance of the bloater chub, the most common one in the fishery, has been declining at the rate of 20 percent per year since 1960, and that the decline is characterized by reduction in abundance, increase in growth rate, decrease in recruitment, and a shift in the sex ratio. The commercial catch in pounds has not reflected this drastic decline, primarily because of increases in fishing effort, increases in mobility in the fishery and



increases in the market value of chubs, the normal reaction to reduced supply.

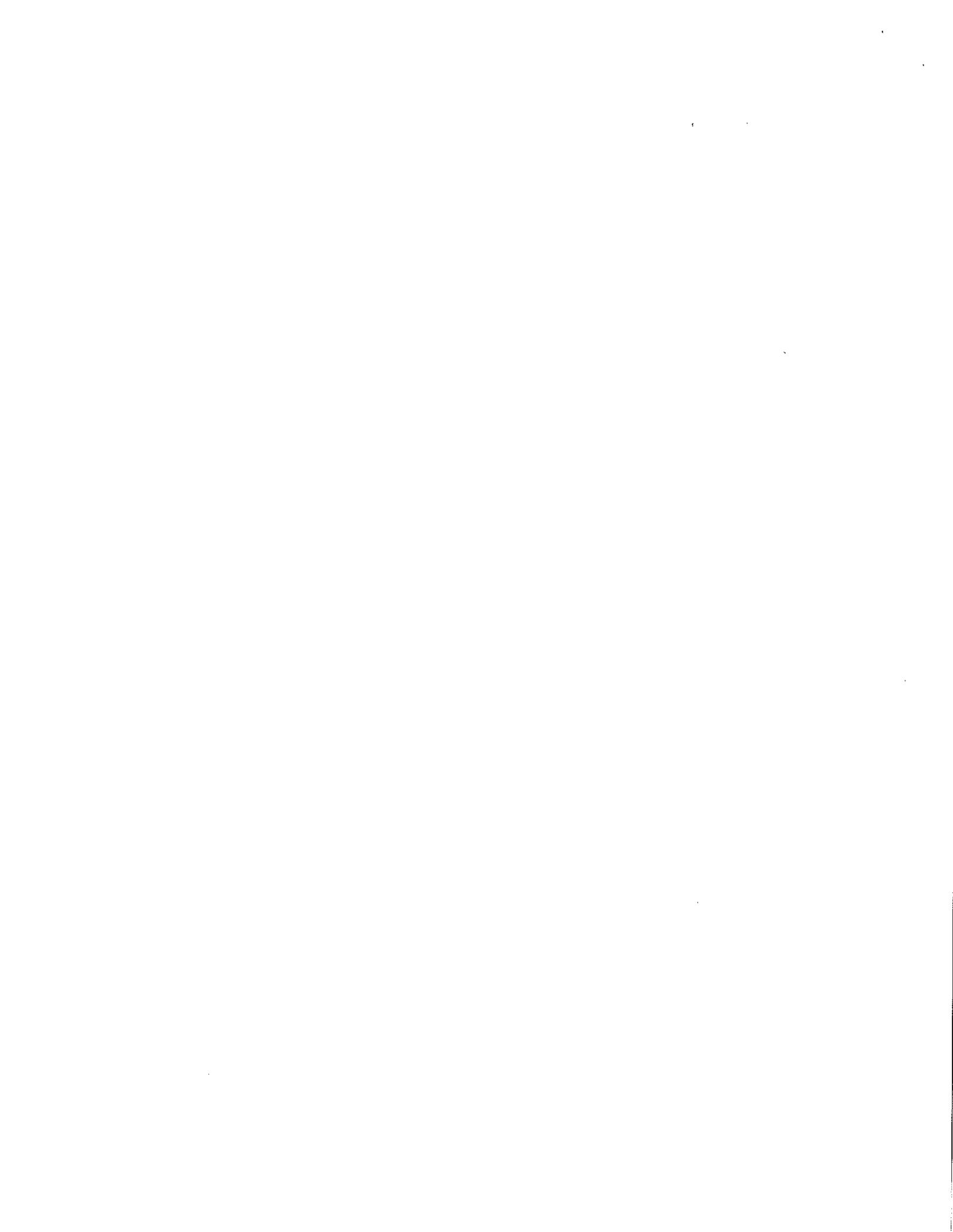
To more adequately characterize the Lake Michigan commercial fishery, information gathered from catch report forms and license applications was reviewed in detail.

Thus far in the 1973-74 license year, there are 230 licenses extant and a total of 652 persons engaged in the fishery, either as licensees or employees. The center for the commercial fishery is the Green Bay-northern Door County waters. Door County alone accounts for 1/3 of all persons employed in the fishery. The counties of Brown, Marinette and Oconto bordering Green Bay account for an additional 1/3. The remaining licensees are uniformly distributed southward from Door County along the Lake Michigan shoreline.

The average age of those persons engaged in the fishery is 51 years, and in most respects the age distribution of the participants could be considered normal.

License applicants are required to present information regarding their previous year's catch value, total fishing effort in the prior year, and the value of their fishing gear. Seventy percent of all applicants report catches valued at less than \$5,000 per year. Only 10 percent of all applicants report catches valued in excess of \$10,000 per year. Seventy percent of all applicants report they have fished fewer than 60 days per year. Only 20 percent report fishing more than 80 days in any one year. Of all applicants licensed in the preceding four years, nearly 60 percent have reported gear values of less than \$5,000.

On the basis of evaluation of investment and participation in the fishery, it is evident that the full-time commercial fishery is comprised of fewer than 50 licensees.



The geographic distribution of the single species fishery should be taken into account in an evaluation of the state of the fishery as well. The present chub fishery with very few exceptions exists from the Port of Sheboygan southward to the Illinois-Wisconsin line. The present whitefish fishery exists primarily in the waters of northern Door County, with some recent participation by fishermen from the Marinette-Oconto County area of Green Bay. The present alewife fishery is somewhat more randomly distributed throughout our waters; however, greatest areas of production are the western shore of Green Bay in the Oconto County area, and the Manitowoc-Two Rivers areas along the Lake Michigan shoreline proper. At present there is relatively little diversity in the fishery. Any licensee engaged in chub fishing will most likely not engage in the whitefish fishery or other major fisheries. Similarly, those involved in the whitefish fishery in northern Door County are not inclined to participate in other species fisheries elsewhere in Lake Michigan.

The chub fishery has been reviewed in some detail; however, it is also well to review the present status of the whitefish fishery. In 1973 the commercial fishery reflected an abundant whitefish stock. Whitefish production will no doubt surpass 1,000,000 pounds in Wisconsin waters in 1973, reflecting the greatest production since 1947. However, Department biologists and commercial fishermen have noted very little recruitment to the whitefish stocks. Lack of strong year classes entering the commercial fishery will indicate that commercial production in ensuing years will decline markedly. Cycles in production of whitefish have been characteristic of the Great Lakes whitefish fisheries.



The trends illustrated in the chub and whitefish fisheries and the relatively insecure state of the industry suggest that new controls may be needed in the commercial fishery to enhance the future of both whitefish and chub production in Lake Michigan, thereby fulfilling the original statement that the fishery can be managed to man's benefit. The solution most often employed is that of replacing the common rights in the fishery with rights that are essentially private and consistent and in balance with the allowable yields. This program should both permit and promote economic efficiency in long-range management of the commercial fishery.

RJP:ew

12-18-73



LAKE MICHIGAN COMMERCIAL FISHERY

Reporting Licensees

Catch Value (\$)	1969		1970		1971	
	Proportion *	#	Proportion	#	Proportion	#
< 100	.23	51	.23	54	.19	42
100 < 500	.40	39	.43	48	.43	50
500 < 1,000	.49	21	.51	18	.50	17
1,000 < 5,000	.72	52	.71	48	.70	43
5,000 < 10,000	.80	17	.81	22	.79	19
10,000 < 20,000	.91	24	.89	20	.90	24
20,000 < 50,000	.98	16	.97	20	.98	17
≥50,000	1.0	5	1.0	6	1.0	4
		<u>225</u>		<u>236</u>		<u>216</u>

\*Accumulative proportion earning "less than" greatest listed catch value

Reporting Licensees

Effort (days)	1969		1970		1971	
	Proportion *	#	Proportion	#	Proportion	#
< 10	.23	51	.23	55	.21	46
10 < 20	.40	38	.39	37	.40	41
20 < 40	.55	34	.58	45	.56	33
40 < 60	.69	32	.71	31	.69	30
60 < 80	.77	19	.79	19	.77	17
80 < 100	.81	9	.83	10	.86	19
≥100	1.0	42	1.0	39	1.0	30
		<u>225</u>		<u>236</u>		<u>216</u>

\*Accumulative proportion fish "less than" greatest listed number of days

License Applicants

Gear Value (\$)	1969-70		1970-71		1971-72		1972-73	
	Proportion*	#	Proportion	#	Proportion	#	Proportion	#
< 1,000	.29	53	.24	55	.22	52	.22	55
1,000 < 5,000	.59	54	.58	78	.54	76	.58	88
5,000 < 10,000	.70	19	.69	26	.66	30	.69	27
10,000 < 20,000	.84	26	.84	34	.82	37	.81	31
≥20,000	1.0	28	1.0	37	1.0	44	1.0	46
		<u>180</u>		<u>230</u>		<u>239</u>		<u>247</u>

\*Accumulative proportion with gear valued at "less than" greatest listed value

< Means less than

≥ Means more than or equal to



Participants in Lake Michigan Commercial Fishery - Wisconsin

<u>County</u>	1973-74 Licensees		Employees + Licensees		Mean Age of Licensees <sup>1</sup>
	<u>Nr.</u>	<u>%</u>	<u>Nr.</u>	<u>%</u>	
Door	67	29.2	210	32.2	49.3
Brown	35	15.2	103	15.9	49.5
Marinette	31	13.5	102	15.7	50.3
Oconto	23	10.0	55	8.4	52.1
Milwaukee	15	6.5	27	4.1	42.8
Kenosha	12	5.2	27	4.1	50.9 <sup>2</sup>
Racine	10	4.3	29	4.4	48.4
Sheboygan	10	4.3	24	3.7	53.9
Kewaunee	8	3.5	28	4.3	60.4
Manitowoc	8	3.5	20	3.1	52.5
Nonresident	7	3.1	17	2.6	44.6
Ozaukee	<u>4</u>	<u>1.7</u>	<u>10</u>	<u>1.5</u>	<u>53.0</u>
Totals	230 + 422 =		652		±= 50.7 years

1. Age as of Dec. 1, 1973

2. Excludes one listed as 12 years of age