

Wisconsin Department of Natural Resources

West Central District

Management Report Number 54

May, 1972

MISSISSIPPI RIVER SPECIAL TAILWATER SPORT FISHING CREEL CENSUS  
IN POOL 7, MARCH 1 - APRIL 30, 1971

Greg R. Mathson  
Creel Census Clerk

DuWayne F. Gebken  
Mississippi River Fisheries Biologist

## TABLE OF CONTENTS

	Page
Introduction	1
Description of the Area	1
Methods	1
Results	2
The Angler (age and origin)	2
The Angler (method and extent of fishing)	7
The Catch (general information)	7
The Catch (composition)	7
The Catch (rates for various methods and baits)	13
The Catch (length and age distribution of walleye and sauger)	13
Summary	24
Tables	
1. Age composition of anglers	3
2. Age composition of anglers engaged in different types of fishing	3
3. Total number of anglers by age	4
4. State and county of origin for anglers fishing Pool 7 tailwaters	5
5. Zone based on distance traveled by anglers	6
6. Angler origin and waters fished	6
7. Total projected number of hours spent fishing by type of fishing and month	8
8. Summary of completed fishing trips	9
9. Catch per man-hour by month	9
10. Actual number of anglers by fishing method and lure used in each month	10
11. Projected catch of fish by type of fishing during each month	11
12. Actual catch per man-hour and number of fish caught during each month	12
13. Actual catch per man-hour and number of fish caught by type of fishing	14
14. Actual catch per man-hour and number of fish caught by fishing method	15
15. Actual catch per man-hour and number of fish caught with various baits	16
16. Length distribution of walleye and sauger taken with sonars	18
17. Age and length composition of sauger in the catch	19
18. Length frequency of walleye and sauger in the catch	20
19. Age and length composition of walleye in the catch	22
20. Comparative age composition of the March-April walleye and sauger catch for 1969, 1970, and 1971	23
Figures	
1. General Mississippi River map	26
2. Creel census - cover sheet	27
3. Creel census - creel sheet	28

## INTRODUCTION

A creel census was conducted in the tailwaters of Pool 7 from March 1 to April 30, 1971 to evaluate the fishing pressure and harvest during a two month period previously closed to fishing for large game fish.<sup>1/</sup> The 1971 special tailwater creel census survey was conducted under the auspices of the Fish Technical Section of the Upper Mississippi River Conservation Committee as part of a plan to maintain a continuing evaluation of the sport fishery.<sup>2/</sup>

## DESCRIPTION OF THE AREA

Pool 7 is one of 26 navigation pools created by the construction of locks and dams on the Mississippi River in the 1930's between Hastings, Minnesota and Alton, Illinois--a distance of approximately 928 miles. Pool 7 is impounded by Lock and Dam No. 7 at Dresbach, Minnesota. It is 12 miles long and contains 13,600 acres.

The upper boundary of the pool is Lock and Dam No. 6 which is located at Trempealeau, Wisconsin. The rapid passage of water through the gates of the dam influences the navigation channel for a distance of approximately one-half mile downstream depending upon the volume of water passed. This area is classified as tailwater and is known to provide excellent angling for the larger game fish species. It was in this tailwater area that the 1971 sport fishery creel census was conducted. Just below Lock and Dam No. 6 is a permanently moored fishing barge from which the public can fish for a small daily fee.

Towns found along Pool 7 are Trempealeau and Onalaska, Wisconsin and Dresbach and Dakota, Minnesota. La Crosse, Wisconsin is the largest city in the area with a population of over 50,000 and is located just below Pool 7.

## METHODS

One man was stationed at the Trempealeau landing which is the only public boat landing located within the tailwater area of Pool 7. In addition to completing creel census forms (figures 2 and 3), lengths of every walleye and sauger in the catch were recorded. Weights were taken from a representative sample of walleye and sauger in the catch. Aging data used to compile the tables were obtained from scales collected from walleye and sauger in 1969 and 1970.

<sup>1/</sup> Large game fish include walleye, sauger, northern pike, largemouth bass, and smallmouth bass.

<sup>2/</sup> The U.M.R.C.C. is an organization consisting of representatives from Minnesota, Wisconsin, Iowa, Illinois, and Missouri whose objectives are to facilitate cooperation between the states for studies and management of the natural resources of the river, to exchange information about the river and its problems at regular meetings, and to promote cooperation in resource management of interstate waters.

To insure a uniform and random census, a work schedule was established which utilized a combination of two consecutive census days followed by one day off plus a rotation between "early" days (7:00 - 11:00 A.M.), "mid" days (11:00 A.M. - 3:00 P.M.), and "late" days (3:00 - 7:00 P.M.). By following this prearranged schedule without deviation throughout the two month study period, the requisite randomness and uniformity was achieved.

The number of bank fishermen contacts increased considerably in 1971 compared to previous years. In past years, bank fishermen, except for those coming to the landing, were not contacted. In 1971, the creel census clerk contacted bank fishermen while they were fishing from the bank.

The use of a bait with the trade name "Sonar" manufactured by Heddon has been criticized by a number of anglers and conservationists. Their concerns are (1) that the Sonar may be exceedingly effective in harvesting large spawning walleye and sauger; (2) that the Sonar may be responsible for much of the foul hooking occurring on the river. Sonar catch data have been analyzed separately, and average lengths and weights of walleye and sauger caught on sonars have been compared to those taken by other methods.

## RESULTS

The creel census was designed to evaluate the fishing pressure and harvest during a two month period previously closed to fishing for large game fish and to provide information on the angler, catch, and relationship of various factors to the catch. These factors are discussed below in limited detail. The accompanying tables should be consulted for further information. Pertinent tables are grouped at the end of each section for reference.

### The Angler (age and origin)

Of the 691 fishermen contacted during March and April, 94.5 percent were men. The average age of all anglers was 39.5 years. Male anglers averaged 39.4 years and women averaged 40.4 years. Ages ranged from 7 to 88 years. Eleven percent of the fishermen were 65 years of age or older (Tables 1, 2, and 3).

Fishing in the tailwaters of Pool 7 during March and April was primarily a local sport since 82.2 percent of the anglers resided within 50 miles of Pool 7. Wisconsin residents comprised 80.3 percent of the anglers contacted. Trempealeau County contributed the greatest fishing pressure followed by La Crosse, Milwaukee, and Rock Counties (Tables 4 and 5).

Reciprocity between Minnesota and Wisconsin allows anglers from either state to fish the Mississippi River under the same regulations and one license. Wisconsin statutory waters received 49.9 percent of the fishing pressure, and Minnesota statutory waters received 36.6 percent. Angler pressure spent fishing both state's waters amounted to 14.4 percent.

Table 1

## AGE COMPOSITION OF ANGLERS

Age	Male		Female		Combined	
	No.	%	No.	%	No.	%
Under 12	23	3.3	3	0.5	26	3.8
12 - 15	29	4.2	2	0.3	31	4.5
16 - 17	12	1.7	0	0.0	12	1.7
18 - 24	72	10.4	6	0.9	78	11.3
25 - 34	181	26.2	2	0.3	183	26.5
35 - 44	108	15.6	7	1.0	115	16.6
45 - 64	153	22.1	15	2.2	168	24.3
65 and over	76	11.0	2	0.3	78	11.3
<b>TOTAL</b>	<b>654</b>	<b>94.5</b>	<b>37</b>	<b>5.5</b>	<b>691</b>	<b>100.0</b>

Table 2

## AGE COMPOSITION OF ANGLERS ENGAGED IN DIFFERENT TYPES OF FISHING

Type of Fishing	Male		Female		Overall	
	No.	Avg. Age	No.	Avg. Age	No.	Avg. Age
Boat	433	36.4	15	26.7	448	36.1
Bank	131	44.9	17	48.5	148	45.3
Ice	90	46.1	5	53.6	95	46.5
<b>TOTAL</b>	<b>654</b>		<b>37</b>		<b>691</b>	
<b>AVERAGE</b>		<b>39.4</b>		<b>40.4</b>		<b>39.5</b>

Table 3

## TOTAL NUMBER OF ANGLERS BY AGE

Age	Male	Female	Total	Age	Male	Female	Total	Age	Male	Female	Total
7	1	-	1	33	7	-	7	59	6	1	7
8	2	-	2	34	10	-	10	60	6	-	6
9	5	1	6	35	13	-	13	61	5	3	8
10	9	2	11	36	13	1	14	62	16	2	18
11	6	-	6	37	4	2	6	63	13	1	14
12	8	1	9	38	7	4	11	64	7	1	8
13	6	-	6	39	8	-	8	65	6	-	6
14	8	-	8	40	13	-	13	66	13	-	13
15	7	1	8	41	18	-	18	67	6	-	6
16	8	-	8	42	15	-	15	68	-	1	1
17	4	-	4	43	14	-	14	69	2	1	3
18	4	-	4	44	3	-	3	70	7	-	7
19	9	-	9	45	10	-	10	71	13	-	13
20	8	1	9	46	6	3	9	72	4	-	4
21	10	2	12	47	7	-	7	73	5	-	5
22	10	2	12	48	5	-	5	74	-	-	-
23	11	1	12	49	3	-	3	75	4	-	4
24	20	-	20	50	10	-	10	76	5	-	5
25	22	-	22	51	4	-	4	78	5	-	5
26	16	-	16	52	10	-	10	79	1	-	1
27	26	1	27	53	7	-	7	81	3	-	3
28	16	-	16	54	3	2	5	85	1	-	1
29	23	-	23	55	9	-	9	88	1	-	1
30	18	-	18	56	5	2	7				
31	28	1	29	57	3	-	3		<u>654</u>	<u>37</u>	<u>691</u>
32	15	-	15	58	18	-	18		<u>    </u>	<u>    </u>	<u>    </u>

Table 4

STATE AND COUNTY OF ORIGIN FOR ANGLERS FISHING  
POOL 7 TAILWATERS

WISCONSIN			MINNESOTA			OTHER STATES		
County	No.	% of Total	County	No.	% of Total	State	No.	% of Total
Buffalo	6	0.9	Fillmore	3	0.4	Illinois	20	2.9
Clark	2	0.3	Mower	2	0.3	Iowa	6	0.9
Crawford	2	0.3	Winona	22	3.2	Michigan	1	0.1
Dane	10	1.4	Houston	4	0.6	Others	1	0.1
Dodge	2	0.3	Olmstead	20	2.9			
Eau Claire	3	0.4	Dakota	2	0.3			
Jackson	11	1.6						
Kenosha	2	0.3						
LaCrosse	114	16.5						
Milwaukee	24	3.5						
Monroe	5	0.7						
Rock	15	2.2						
Trempealeau	400	57.9						
Waukesha	10	1.4						
Waupaca	2	0.3						
Winnebago	2	0.3						
<b>TOTAL</b>	<b>610</b>	<b>88.3</b>	<b>TOTAL</b>	<b>53</b>	<b>7.7</b>	<b>TOTAL</b>	<b>28</b>	<b>4.0</b>

Table 5

ZONE BASED ON DISTANCE TRAVELED BY ANGLERS

Zone	1	2	3	4	5	6	7	8	9
Miles	0-25	26-50	51-75	76-100	101-125	126-150	151-250	251-500	Over 500
Number	528	40	26	0	20	19	56	1	1
Percent	76.4	5.8	3.8	0.0	3.0	2.7	8.1	0.1	0.1

Table 6

ANGLER ORIGIN AND WATERS FISHED

Angler Origin	Wisconsin Statutory Waters	Minnesota Statutory Waters	Multiple <sup>1/</sup>
Wisconsin	304	222	84
Illinois	14	2	4
Iowa	-	6	-
Michigan	1	-	-
Minnesota	20	22	11
Others	-	1	-
TOTALS	339	253	99

<sup>1/</sup>Fished both Wisconsin and Minnesota waters for equal amounts of time.

### The Angler (method and extent of fishing)

Projection of data collected during the census indicates that 4,179 fishing trips were made to the tailwaters of Pool 7 during March and April, 1971, and a total of 14,394 hours were spent fishing (Tables 7 and 11).

Ice fishing predominated during March and accounted for 65.3 percent of the total fishing hours. In April anglers used a boat 74.5 percent of the time and fished from the bank or the barge the remainder of the time (Table 7).<sup>3/</sup>

April was the most active and most productive fishing month and accounted for 77.0 percent of the total hours and a catch rate of 0.756 fish per man-hour. The overall catch rate for March and April was 0.714 fish per man-hour (Table 9).

Casting and still fishing were the two most frequently used methods of fishing. Casting was used 53.0 percent of the time, and still fishing was used 46.6 percent of the time (Table 10).

Live baits were used 33.4 percent and artificial baits were used 37.0 percent of the time. A combination of live and artificial baits were used 29.5 percent of the time (Table 10).

Since the tailwater area is inhabited mainly by the larger game fish species during March and April, it would be expected that most of the anglers fishing this area were seeking these species. Such was the case since 89.6 percent of the anglers contacted were seeking walleye or sauger. Panfish made up the remainder of the species being sought.

### The Catch (general information)

Projection of data obtained from contacts with 691 fishermen and 41 "instantaneous" angler counts reveals that during the 14,394 hours spent fishing in the tailwaters of Pool 7 in March and April, 1971, a total of 10,088 fish were caught at a rate of 0.7008 fish per man-hour (Table 11).

Anglers spent 3,458 hours fishing during March to catch 1,883 fish at a catch rate of 0.5770 fish per man-hour. April anglers were more successful and caught 8,205 fish in 10,936 hours at a catch rate of 0.7564 fish per man-hour (Table 11).

### The Catch (composition)

The most abundant species in the overall catch was walleye which made up 40.8 percent of the catch. Next in abundance was sauger (30.2 percent) followed by yellow perch (18.5 percent) (Table 12).

<sup>3/</sup> The barge anglers were not contacted to determine their actual catch, but projected hours they fished were compiled in the tables.

Table 7

TOTAL PROJECTED NUMBER OF HOURS SPENT FISHING BY TYPE OF FISHING AND MONTH

Months	TYPE OF FISHING										TOTAL	
	Boat		Bank or Wading		Barge		Total Open Water		Ice		No. Hours	%
	No. Hours	% <sup>1/</sup>	No. Hours	%	No. Hours	%	No. Hours	%	No. Hours	%		
March	974	28.2	97	2.8	130	3.8	1,201	34.7	2,257	65.3	3,458	24.0
April	8,145	74.5	2,633	24.1	158	1.4	10,936	100.0	0	0	10,936	76.0
TOTAL HOURS	9,119	63.4 <sup>2/</sup>	2,730	19.0	288	2.0	12,137	84.3	2,257	15.7	14,394	100.0

<sup>1/</sup> Percentage by type of fishing for month

<sup>2/</sup> Percentage by month for the two month period

<sup>3/</sup> Percentage by type of fishing for the two month period

Table 8

SUMMARY OF COMPLETED FISHING TRIPS

	Boat	Bank	Total Open Water	Ice	Total All Types
Total Hours	1,464.5	251.5	1,716	183.5	1,899.5
Total Anglers Contacted	425.0	79	504	57	561
Average Hours	3.4	3.2	3.4	3.2	3.4

Table 9

CATCH PER MAN-HOUR BY MONTH

	March	April	Total
Hours Fished	514	1,724	2,238
Fish Caught	293	1,304	1,597
Catch Per Man-Hour	0.570	0.756	0.714

Table 10

## ACTUAL NUMBER OF ANGLERS BY FISHING METHOD AND LURE USED IN EACH MONTH

FISHING METHOD	March		April		TOTAL	
	No. Anglers	%	No. Anglers	%	No. Anglers	%
Casting	67	37.4	299	58.4	366	53.0
Still Fishing <sup>1/</sup>	110	61.5	212	41.4	322	46.6
Trolling	2	1.1	-	-	2	0.3
Unknown	-	-	1	0.2	1	0.1
<b>TOTAL</b>	<b>179</b>		<b>512</b>		<b>691</b>	
<b>FISHING LURE</b>						
Worms	-	-	34	6.6	34	4.9
Minnows	23	12.8	163	31.8	186	26.9
Multiple Live Bait	-	0.0	11	2.1	11	1.6
<b>TOTAL LIVE BAIT</b>	<b>23</b>	<b>12.8</b>	<b>208</b>	<b>40.6</b>	<b>231</b>	<b>33.4</b>
Jigs	35	19.6	24	4.7	59	8.5
Flies	10	5.6	4	0.8	14	2.0
Sonar	39	21.8	123	24.0	162	23.4
Other Artificials	16	8.9	5	1.0	21	3.0
<b>TOTAL ARTIFICIALS</b>	<b>100</b>	<b>55.9</b>	<b>156</b>	<b>30.4</b>	<b>256</b>	<b>37.0</b>
Multiple Live and Artificial <sup>2/</sup>	56	31.3	148	28.9	204	29.5
<b>TOTAL</b>	<b>179</b>		<b>512</b>		<b>691</b>	

<sup>1/</sup> Includes 100

<sup>2/</sup> Includes any combination of live and artificial baits used on the same line.

Table 11

PROJECTED CATCH OF FISH BY TYPE OF FISHING DURING EACH MONTH

Species	MARCH				APRIL				TOTAL FOR MARCH AND APRIL					
	Boat	Bank	Barge	Ice	Total	Boat	Bank	Barge	Total	Boat	Bank	Barge	Ice	Grand Total
White bass	.	-	-	-	-	279	32	-	311	279	32	-	-	311
Yellow perch	.	75	-	-	75	62	1,713	-	1,775	62	1,788	-	-	1,850
Sauger	291	7	-	806	1,104	1,400	599	-	1,999	1,691	606	-	806	3,103
Walleye	207	18	-	475	700	2,794	605	-	3,399	3,001	623	-	475	4,099
Smallmouth bass	.	-	-	-	-	7	-	-	7	7	-	-	-	7
Largemouth bass	.	-	-	-	-	12	13	-	25	12	13	-	-	25
Bluegill	.	-	-	-	-	-	6	-	6	-	6	-	-	6
Rock bass	.	4	-	-	4	-	110	-	110	-	114	-	-	114
Black crappie	.	-	-	-	-	322	251	-	573	322	251	-	-	573
Projected number of fishermen	318	38	-	701	1,057	2,314	808	-	3,122	2,632	846	-	701	4,179
Projected number of fish	498	104	-	1,281	1,883	4,876	3,329	-	8,205	5,374	3,433	-	1,281	10,088
Projected hours fished	974	97	130	2,257	3,458	8,145	2,633	152	10,936	9,119	2,730	288	2,257	14,394
Projected fish per hour	0.5113	1.0741	-	0.5677	0.5700	0.5985	1.2641	-	0.7564	0.5893	1.2575	-	0.5677	0.7008

Table 12

ACTUAL CATCH PER MAN-HOUR AND NUMBER OF FISH CAUGHT  
DURING EACH MONTH

SPECIES	MARCH		APRIL		TOTAL	
	No. Fish	Fish Per Man-Hour	No. Fish	Fish Per Man-Hour	No. Fish	Fish Per Man-Hour
White bass	-	-	50	0.0290	50	0.0223
Yellow perch	21	0.0409	276	0.1601	297	0.1327
Sauger	163	0.3171	319	0.1850	482	0.2154
Walleye	108	0.2101	545	0.3161	653	0.2918
Smallmouth bass	-	-	1	0.0006	1	0.0004
Largemouth bass	-	-	4	0.0023	4	0.0018
Bluegill	-	-	1	0.0006	1	0.0004
Rock bass	1	0.0019	17	0.0099	18	0.0080
Black crappie	-	-	91	0.0528	91	0.0407
Total Fish Caught	293		1,304		1,597	
		0.5700		0.7564		0.7136
Total Hours Fished	514		1,724		2,238	

Projected data indicates that a total of 7,202 walleye and sauger were caught during the months of March and April in the Pool 7 tailwater area. This figure represents 34.7 percent of the total walleye and sauger caught during a twelve month 1967-68 Pool 7 creel census period. March anglers caught 1,804 walleye and sauger at a catch rate of 0.522 fish per man-hour. April anglers caught the remaining 5,398 at a rate of 0.494 fish per man-hour (Table 11).

March anglers caught 1,804 large game fish at a rate of 0.522 fish per man-hour. April anglers caught 5,430 large game fish at a rate of 0.497 fish per man-hour (Table 11).

#### The Catch (rates for various methods and baits)

Bank fishing produced the highest catch rate of any type of fishing (1.252 fish per man-hour). Boat fishermen caught fish at a rate of 0.585 fish per man-hour (Table 13).

Still fishing was the most productive method and yielded 0.890 fish per man-hour as compared to 0.568 for ice fishing and 0.559 for casting (Table 14).

Anglers using worms had the highest catch rate of 1,615 fish per man-hour. Fishermen using live bait averaged 0.931 fish per man-hour, while those using artificial baits averaged 0.667 fish per man-hour (Table 15).

Anglers using sonars caught walleye and sauger at a rate of 0.689 fish per man-hour, or 0.182 fish per man-hour more than the rate for all baits combined. Walleye taken with sonars averaged 0.7 inches longer than those taken with other baits. Sauger taken with sonars averaged 0.3 inches longer than those taken with other baits. However, neither figure represents a significant difference. About 13 percent of the walleye caught with sonars were of the "lunker" class compared to five percent taken with all other baits combined (Tables 15 and 16).

One interesting but presently unexplainable difference exists between the sonar catch and the catch with other baits. The proportion of sauger to walleye was 0.43/1.00 for sonar caught fish. The proportion of sauger to walleye caught with all other baits was 0.94/1.00.

#### The Catch (length and age distribution of walleye and sauger)

The 1971 spring sauger fishery in the Pool 7 tailwaters was primarily dependent upon two year classes. Over half (54.5 percent) of the sauger creeled were three year old fish with another 26.1 percent of the catch coming from two year old fish. Only 1.4 percent of the sauger were over four years old, and no one year old fish were creeled (Table 17).

Over sixty percent (65.4 percent) of the sauger caught were between 10.0 and 12.0 inches. Prior to 1950 there existed a statewide 13.0 inch minimum size limit on walleye and sauger. Over two-thirds (70 percent) of the sauger catch was smaller than 13.0 inches during March and April, 1971 (Table 18).

Table Lj

## ACTUAL CATCH PER MAN-HOUR AND NUMBER OF FISH CAUGHT BY TYPE OF FISHING

SPECIES	BOAT		BANK		ICE		TOTAL	
	No. Fish	Fish Per Man-Hour						
White bass	45	0.0293	5	0.0115	-	-	50	0.0223
Yellow perch	10	0.0065	287	0.6583	-	-	297	0.1327
Sauger	292	0.1901	95	0.2179	95	0.3571	482	0.2154
Walleye	498	0.3242	99	0.2271	56	0.2105	653	0.2918
Smallmouth bass	1	0.0007	-	-	-	-	1	0.0004
Largemouth bass	2	0.0013	2	0.0046	-	-	4	0.0018
Bluegill	-	-	1	0.0023	-	-	1	0.0004
Rock bass	-	-	18	0.0413	-	-	18	0.0080
Black crappie	52	0.0339	39	0.0894	-	-	91	0.0407
Total Fish Caught	900	0.5859	546	1.2523	151	0.5677	1,597	0.7136
Total Hours Fished	1,536.0		436.0		266		2,238.0	

Table 14

## ACTUAL CATCH PER MAN-HOUR AND NUMBER OF FISH CAUGHT BY FISHING METHOD

SPECIES	CASTING		STILL FISHING		TROLLING		ICE FISHING		UNKNOWN		TOTAL	
	No. Fish Caught	Fish Per Man-Hour										
White bass	24	0.0220	26	0.0253	-	-	-	-	-	-	50	0.0223
Yellow perch	1	0.0008	296	0.2877	-	-	-	-	-	-	297	0.1327
Sauger	224	0.1870	256	0.2488	2	0.2500	95	0.3571	-	-	482	0.2154
Walleye	404	0.3372	241	0.2342	2	0.2500	56	0.2105	6	2.0000	653	0.2918
Smallmouth bass	-	-	1	0.0010	-	-	-	-	-	-	1	0.0004
Largemouth bass	1	0.0008	3	0.0029	-	-	-	-	-	-	4	0.0018
Bluegill	-	-	1	0.0010	-	-	-	-	-	-	1	0.0004
Rock bass	-	-	18	0.0175	-	-	-	-	-	-	18	0.0080
Black crappie	16	0.0144	74	0.0719	-	-	-	-	1	0.3000	91	0.0407
Total fish caught	670		916		4		151		7		1,597	
Total hours fished	1,198.0		1,029.0		8.0		266.0		3.0		2,238	
		0.5593		0.8902		0.5000		0.5677		2.3333		0.7136

Table 15

## ACTUAL CATCH PER MAN-HOUR AND NUMBER OF FISH CAUGHT WITH VARIOUS BAITS

SPECIES	JIG		FLY		SONAR		OTHER ARTIFICIAL		TOTAL ARTIFICIAL		MULTIPLE LIVE AND ARTIFICIAL	
	No. Fish Caught	Fish Per Man-Hour	No. Fish Caught	Fish Per Man-Hour	No. Fish Caught	Fish Per Man-Hour	No. Fish Caught	Fish Per Man-Hour	No. Fish Caught	Fish Per Man-Hour	No. Fish Caught	Fish Per Man-Hour
White bass	-	-	-	-	19	0.0360	-	-	19	0.0241	5	0.0073
Yellow perch	-	-	-	-	-	-	-	-	-	-	52	0.0759
Sauger	39	0.2826	21	0.4516	109	0.2062	15	0.2097	184	0.2345	137	0.2001
Walleye	28	0.2028	15	0.3225	255	0.4825	20	0.2797	318	0.4054	147	0.2147
Smallmouth bass	-	-	-	-	-	-	-	-	-	-	-	-
Largemouth bass	-	-	-	-	1	0.0019	-	-	1	0.0013	-	-
Bluegill	-	-	-	-	-	-	-	-	-	-	-	-
Rock bass	-	-	-	-	-	-	-	-	-	-	-	-
Black crappie	-	-	-	-	1	0.0019	-	-	1	0.0013	17	0.0248
Total fish caught	67		36		385		35		523		358	
Total hours fished	138.0		46.5		528.5		71.5		784.5		684.5	
		0.4855		0.7742		0.7285		0.4895		0.6667		0.5230

Table 15 Continued

ACTUAL CATCH PER MAN-HOUR AND NUMBER OF FISH CAUGHT WITH VARIOUS BAITS

SPECIES	WORMS		MINNOWS		MULTIPLE LIVE BAIT		TOTAL LIVE BAIT		TOTAL ALL BAITS	
	No. Fish	Fish Per Man-Hour	No. Fish	Fish Per Man-Hour	No. Fish	Fish Per Man-Hour	No. Fish	Fish Per Man-Hour	No. Fish	Fish Per Man-Hour
White bass	2	0.0188	24	0.0383	-	-	26	0.0338	50	0.0223
Yellow perch	137	1.2164	94	0.1499	14	0.3944	245	0.3186	297	0.1327
Sauger	5	0.0169	154	0.2456	2	0.0563	161	0.2094	482	0.2154
Walleye	3	0.0282	183	0.2919	2	0.0563	188	0.2445	653	0.2918
Smallmouth bass	-	-	1	0.0016	-	-	1	0.0013	1	0.0004
Largemouth bass	-	-	3	0.0048	-	-	3	0.0039	4	0.0018
Bluegill	1	0.0094	-	-	-	-	1	0.0013	1	0.0004
Rock bass	4	0.0176	12	0.0191	2	0.0563	18	0.0234	18	0.0080
Black crappie	20	0.1178	52	0.0829	1	0.0282	73	0.0949	91	0.0407
Total fish caught	172		523		21		716		1,597	
Total hours fished	106.5	1.6150	627.0	0.8341	35.5	0.5915	769.0	0.9311	2,238.0	0.7136

Table 16

LENGTH DISTRIBUTION OF WALLEYE AND SAUGER TAKEN WITH SONARS<sup>1/</sup>

Length (inches)	Walleye	Sauger
7.0 - 7.9	1	-
8.0 - 8.9	-	-
9.0 - 9.9	2	2
10.0 - 10.9	20	20
11.0 - 11.9	58	43
12.0 - 12.9	72	14
13.0 - 13.9	26	8
14.0 - 14.9	9	6
15.0 - 15.9	3	4
16.0 - 16.9	9	8
17.0 - 17.9	3	4
18.0 - 18.9	6	-
19.0 - 19.9	13	-
20.0 - 20.9	16	-
21.0 - 21.9	10	-
22.0 - 22.9	4	-
23.0 - 23.9	1	-
24.0 - 24.9	1	-
28.0 - 28.9	1	-
<b>TOTAL</b>	<b>255</b>	<b>109</b>
<b>Average Size</b>	<b>14.7</b>	<b>12.4</b>
<b>Average Size of Fish Taken by Other Methods</b>	<b>15.4</b>	<b>12.1</b>

<sup>1/</sup> SONAR is the trade name of a popular artificial bait manufactured by Heddon.

Table 17

## AGE AND LENGTH COMPOSITION OF SAUGER IN THE CATCH

Inches	AGE						Total
	Numbers of Fish by Age <sup>1/</sup> and Length						
	I	II	III	IV	V	VI	
9.0 - 9.9	-	25	3	-	-	-	28
10.0 - 10.9	-	78	52	-	-	-	130
11.0 - 11.9	-	14	128	-	-	-	142
12.0 - 12.9	-	9	36	-	-	-	45
13.0 - 13.9	-	-	26	11	-	-	37
14.0 - 14.9	-	-	6	23	-	-	29
15.0 - 15.9	-	-	11	26	-	-	37
16.0 - 16.9	-	-	-	22	-	-	22
17.0 - 17.9	-	-	-	5	4	-	9
18.0 - 18.9	-	-	-	-	2	-	2
19.0 - 19.9	-	-	-	-	-	1	1
<b>TOTAL FISH</b>	-	126	262	87	6	1	482
<b>Percent of Total</b>	-	26.1	54.5	18.0	1.2	0.2	100.0
<b>Estimated Mean Size (inches)</b>	-	10.5	11.8	15.3	17.8	19.5	-

<sup>1/</sup> AGES ARE ESTIMATED FROM AN AGED SAMPLE OF WALLEYE COLLECTED DURING THE 1969 AND 1970 SPRING CREEL CENSUSES AND BOOM CHECKING INVESTIGATIONS IN THE TAILWATERS OF POOL 7.

Table 18

## LENGTH FREQUENCY OF WALLEYE AND SAUGER IN THE CATCH

Size Range	WALLEYE						SAUGER					
	March		April		Total		March		April		Total	
	No.	%										
7.0 - 7.9	-	-	3	0.5	3	0.5	-	-	-	-	-	-
8.0 - 8.9	-	-	-	-	-	-	-	-	-	-	-	-
9.0 - 9.9	-	-	5	0.9	5	0.8	-	-	22	6.9	22	4.6
10.0 - 10.9	2	2.0	41	7.5	43	6.4	21	12.9	95	29.8	116	24.1
11.0 - 11.9	15	14.0	131	24.0	146	22.5	22	13.5	117	36.7	139	28.8
12.0 - 12.9	44	40.6	159	29.2	203	31.1	22	13.5	38	11.9	60	12.5
13.0 - 13.9	17	15.7	79	14.5	96	14.7	15	9.2	15	4.7	30	6.2
14.0 - 14.9	9	8.3	24	4.4	33	5.1	23	14.1	11	3.4	34	7.1
15.0 - 15.9	3	2.8	5	0.9	8	1.2	18	11.0	10	3.1	28	5.8
16.0 - 16.9	3	2.8	9	1.7	12	1.8	25	15.3	4	1.3	29	6.0
17.0 - 17.9	5	4.6	9	1.7	14	2.1	13	8.0	5	1.6	18	3.7
18.0 - 18.9	1	0.9	5	0.9	6	0.9	4	2.5	1	0.3	5	1.0
19.0 - 19.9	2	2.0	18	3.3	20	3.1	-	-	1	0.3	1	0.2
20.0 - 20.9	5	4.5	33	6.0	38	5.8	-	-	-	-	-	-
21.0 - 21.9	1	0.9	9	1.7	10	1.5	-	-	-	-	-	-
22.0 - 22.9	1	0.9	11	2.0	12	1.8	-	-	-	-	-	-
23.0 - 23.9	-	-	2	0.4	2	0.3	-	-	-	-	-	-
24.0 - 24.9	-	-	1	0.2	1	0.2	-	-	-	-	-	-
28.0 - 28.9	-	-	1	0.2	1	0.2	-	-	-	-	-	-
<b>TOTAL</b>	<b>198</b>		<b>747</b>		<b>945</b>		<b>167</b>		<b>719</b>		<b>886</b>	
<b>Average Length (inches)</b>	<b>13.8</b>		<b>13.7</b>		<b>13.7</b>		<b>14.0</b>		<b>11.7</b>		<b>12.5</b>	
<b>Average Weight (pounds)</b>	<b>1.01</b>		<b>1.08</b>		<b>1.04</b>		<b>0.95</b>		<b>0.53</b>		<b>0.74</b>	

The 1971 spring walleye fishery in the Pool 7 tailwaters was also dependent upon two year classes. Nearly eighty percent (77.2 percent) of the walleye creel were in the two year old (44.4 percent) or three year old (32.8 percent) class. Over 18 percent of the catch was four years old or older, and about five percent of the total catch was comprised of one year old walleyes. "Lunker fish," those 20.0 inches and over, comprised 9.8 percent of the catch, with ages ranging from five to eleven years old (Table 19).

Over 50 percent (53.6 percent) of the walleye were between 11.0 inches and 12.9 inches long. Over 60 percent (61.3 percent) were under 13.0 inches in length (Table 18).

Two year old walleye and sauger were quite abundant in the 1971 catch as compared to 1970 and 1969 (Table 20). However, the catch of two year old sauger in 1969 was slightly higher than in 1971. Apparently good year classes of walleye and sauger were produced from the 1969 spring spawning season in Pool 7. Due to the fisherman's preference for larger fish, it is hard to assess the total impact of the 1969 year class of walleye and sauger on the 1971 catch. Three year old sauger made up 54.5 percent of the 1971 catch, and since these fish are of a more desirable size than two year old sauger, it is suspected that fishermen selected three year olds unknowingly by keeping the larger fish. Examination of the sauger age composition data for 1969, 1970, and 1971 indicates that there may be a fisherman bias toward keeping three year old fish in deference to younger fish which are smaller. A less pronounced bias can be noted in walleye, however.

Recent evidence on Pool 7 suggests that flood conditions which occur simultaneously with optimum water temperatures for spawning are conducive to strong year classes of walleye and sauger. As flood waters raise, additional spawning habitat in the form of riprapped banks becomes increasingly available. Conversely, when flood conditions do not correspond with preferred spawning temperatures, a weaker year class such as that noted in age II walleye and sauger in 1970 may result.

The walleye and sauger year classes in Pool 7 vary somewhat; however, it appears that the population is relatively stable.

Table 19

## AGE AND LENGTH COMPOSITION OF WALLEYE IN THE CATCH

Inches	AGE											Total	
	Numbers of Fish by Age <sup>1</sup> and Length												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI		
7.0 - 7.9	3	-	-	-	-	-	-	-	-	-	-	-	3
8.0 - 8.9	-	-	-	-	-	-	-	-	-	-	-	-	-
9.0 - 9.9	5	-	-	-	-	-	-	-	-	-	-	-	5
10.0 - 10.9	22	17	4	-	-	-	-	-	-	-	-	-	43
11.0 - 11.9	-	117	29	-	-	-	-	-	-	-	-	-	146
12.0 - 12.9	-	127	76	-	-	-	-	-	-	-	-	-	203
13.0 - 13.9	-	29	67	-	-	-	-	-	-	-	-	-	96
14.0 - 14.9	-	-	30	3	-	-	-	-	-	-	-	-	33
15.0 - 15.9	-	-	4	2	1	1	-	-	-	-	-	-	8
16.0 - 16.9	-	-	4	6	1	1	-	-	-	-	-	-	12
17.0 - 17.9	-	-	-	5	5	4	-	-	-	-	-	-	14
18.0 - 18.9	-	-	-	1	1	3	1	-	-	-	-	-	6
19.0 - 19.9	-	-	-	-	9	9	2	-	-	-	-	-	20
20.0 - 20.9	-	-	-	-	11	19	8	-	-	-	-	-	38
21.0 - 21.9	-	-	-	-	2	6	2	-	-	-	-	-	10
22.0 - 22.9	-	-	-	-	-	2	2	6	2	-	-	-	12
23.0 - 23.9	-	-	-	-	-	-	-	1	1	-	-	-	2
24.0 - 24.9	-	-	-	-	-	-	-	-	-	-	-	-	1
28.0 - 28.9	-	-	-	-	-	-	-	-	-	-	-	-	1
<b>TOTAL FISH</b>	30	290	214	17	30	43	15	7	3	3	1	1	653
<b>Percent of Total</b>	4.6	44.4	32.8	2.6	4.6	6.6	2.3	1.1	0.4	0.4	0.2	0.2	100.0
<b>Estimated Mean Size (inches)</b>	10.0	12.1	12.9	16.4	19.8	20.0	20.6	22.6	22.8	23.2	28.5		

<sup>1</sup> Ages are estimated from an aged sample of walleye collected during the 1969 and 1970 spring creel censuses and from shocking investigations in the tailwaters of Pool 7.

Table 2-4

## COMPARATIVE AGE COMPOSITION OF THE MARCH-APRIL WALLEYE AND SAUGER CATCH FOR 1969, 1970, AND 1971

Years	WALLEYE											Total
	Percentage of Catch by Age											
	Ages											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	
1969	1.8 (2)	27.5 (76)	41.3 (130)	7.9 (22)	4.9 (14)	6.5 (17)	2.0 (6)	1.4 (4)	1.1 (3)	0.4 (1)	0.4 (1)	100.0 (276)
1970	1.1 (2)	11.6 (21)	31.9 (69)	21.4 (39)	10.4 (19)	12.6 (23)	2.7 (5)	1.1 (2)	0.6 (1)	0.6 (1)	0.0 (0)	100.0 (182)
1971	4.6 (30)	44.4 (290)	32.5 (214)	2.6 (17)	4.6 (30)	6.6 (43)	2.3 (15)	1.1 (7)	0.4 (3)	0.4 (3)	0.2 (1)	100.0 (653)

Years	SAUGER											Total
	Percentage of Catch by Age											
	Ages											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	
1969	0.0 (0)	28.0 (58)	64.7 (134)	5.8 (12)	0.5 (1)	1.0 (2)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	100.0 (207)
1970	0.0 (0)	8.5 (50)	57.6 (339)	33.6 (198)	0.0 (0)	0.0 (0)	0.3 (2)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	100.0 (589)
1971	0.0 (0)	26.1 (126)	54.5 (262)	18.0 (87)	1.2 (6)	0.2 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	100.0 (482)

✓ Figures in parentheses are actual numbers of fish caught in a particular age group.

## SUMMARY

1. A special creel census was conducted in the tailwaters of Pool 7 of the Mississippi River from March 1 to April 30, 1971. The objectives were to evaluate fishing pressure and harvest during a two month period previously closed to fishing for large game fish and to provide information on the angler, the catch, and the relationship of various factors to the catch.
2. All data was segregated by type of fishing (boat, bank, ice), method of fishing (still, cast, troll, ice), and month (March, April).
3. A total of 691 fishermen of which 94.5 percent were men were contacted during the census. The average age of all anglers was 39.5 years.
4. Fishing in the tailwaters of Pool 7 during March and April was primarily a local sport with 82.2 percent of the anglers residing within 50 miles of the area.
5. Projected data indicates that 4,179 fishing trips were made to the tailwaters of Pool 7 during March and April, 1971, and a total of 14,394 hours were spent fishing.
6. Ice fishing predominated during March and accounted for 65.3 percent of the total fishing hours. April anglers used a boat 74.5 percent of the time and fished from the bank or the barge the remainder of the time.
7. April was the most active and most productive month with 77.0 percent of the total fishing hours and a catch rate of 0.756 fish per man-hour.
8. Still fishing and casting were the two most frequently used methods of fishing. Still fishing was used 53.0 percent of the time, and casting was used 46.6 percent of the time.
9. Anglers contacted were fishing for walleye and sauger 89.6 percent of the time.
10. March anglers caught 1,804 large game fish at a rate of 0.522 fish per man-hour. April anglers caught 5,430 large game fish at a rate of 0.497 fish per man-hour.
11. Bank fishing produced the highest catch rate of any type of fishing (1.252 fish per man-hour).
12. Anglers using worms had the highest catch rate of 1.615 fish per man-hour.
13. Anglers using sonars caught walleye and sauger at a rate of 0.689 fish per man-hour which is 0.182 fish per man-hour more than the rate for all baits combined.
14. The average size of walleye and sauger caught with sonars was not significantly larger than the average size of those caught with other baits.
15. About thirteen percent of the walleye caught with sonars were of the "lunker" class as compared to five percent taken with all other baits combined.

16. The proportion of sauger to walleye in the catch was 0.43/1.00 for sonar caught fish and 0.94/1.00 for sauger and walleye caught with all other baits.
17. The spring sauger fishery was primarily dependent upon two year classes of two and three year old fish.
18. Over sixty percent of the sauger caught were between 10.0 and 12.9 inches.
19. Over two-thirds of the sauger catch was smaller than 13.0 inches long.
20. The spring walleye fishery was also dependent upon two year classes of two and three year old fish.
21. Over sixty percent of the walleye caught were under 13.0 inches long.
22. Over fifty percent of the walleye caught were between 11.0 and 12.9 inches long.
23. "Lunker" walleye, those 20.0 inches and over, comprised 9.8 percent of the catch and their ages ranged from five to eleven years old.
24. Two year old walleye and sauger were quite abundant in the 1971 catch.
25. As a general observation, it appears that the walleye population in Pool 7 is stable.

#### ACKNOWLEDGEMENTS

The following personnel of the Wisconsin Department of Natural Resources contributed to the planning and success of the creel census:

Willis Fernholz	- Area Fisheries Manager
Gordon Slifer	- West Central District Environmental Impact Coordinator
Kenneth Wright	- Mississippi River Fisheries Biologist
Richard Ranthum	- Mississippi River Fisheries Biologist
Vernon Crawley	- Fisheries Technician
James Luhm	- Creel Census Clerk
Roy Schumacher	- Fisheries Conservation Aid

Figure 1. General Mississippi River Map

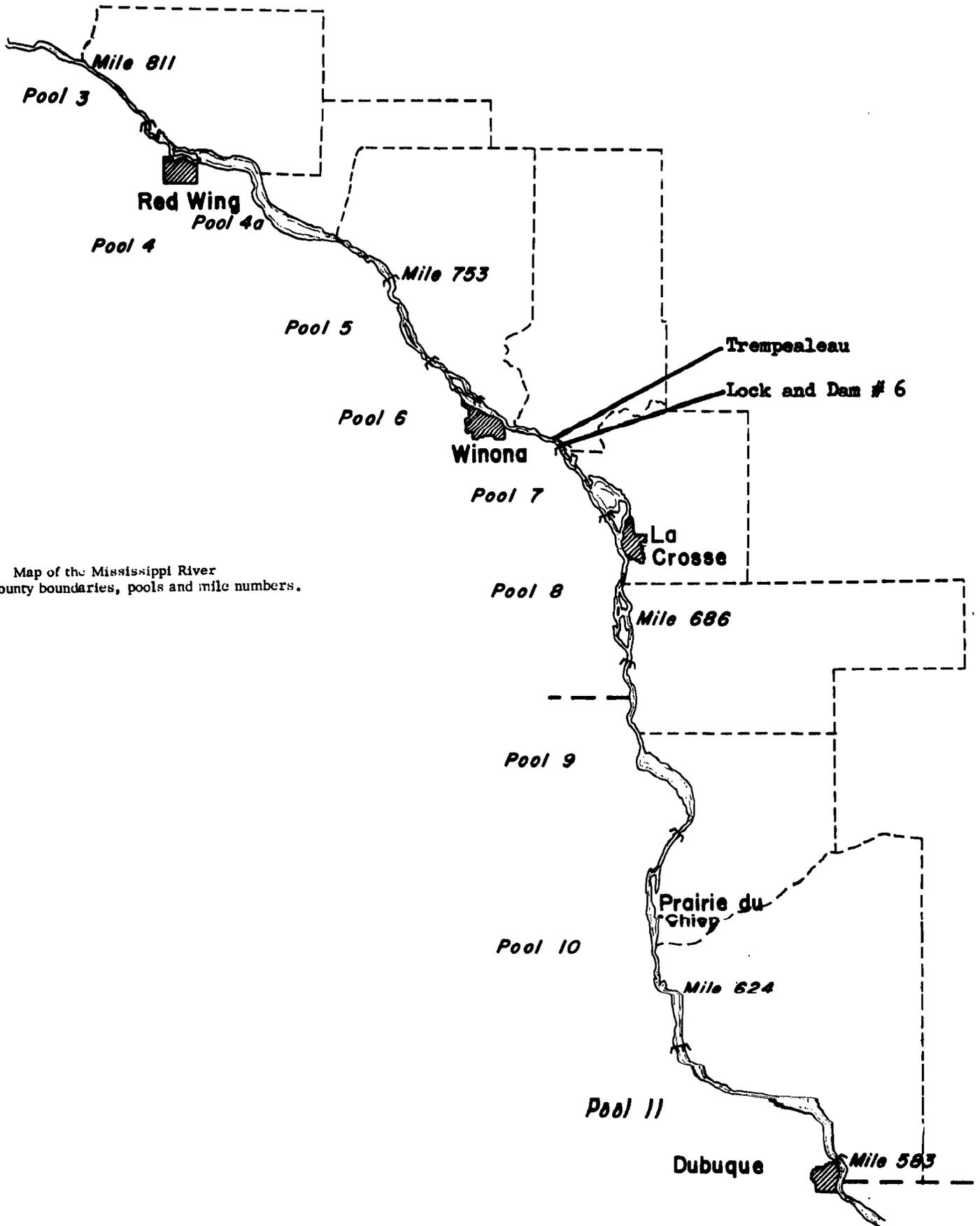


Fig. 1 Map of the Mississippi River with county boundaries, pools and mile numbers.

Figure 2.

CREEL CENSUS - COVER SHEET  
FORM 3600-51

DEPARTMENT OF NATURAL RESOURCES

Card Type 3  
(cc80)

Pool and Section Number \_\_\_\_\_

DATE: Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

CONTACT SCHEDULE: Early \_\_\_\_\_ Late \_\_\_\_\_

Time of Beginning Angler Count \_\_\_\_\_

Time of Ending Angler Count \_\_\_\_\_

Total Time Spent on Count and Contacts \_\_\_\_\_

TOTAL NUMBER OF FISHERMEN COUNTED IN SECTION

Boat \_\_\_\_\_

Wading or Bank \_\_\_\_\_

Barge \_\_\_\_\_

Ice \_\_\_\_\_

Air Temperature \_\_\_\_\_

Water Temperature \_\_\_\_\_

WATER LEVEL: High \_\_\_\_\_ Low \_\_\_\_\_ Normal \_\_\_\_\_  
Rising \_\_\_\_\_ Dropping \_\_\_\_\_

WEATHER: Clear \_\_\_\_\_ Cloudy \_\_\_\_\_ Bright \_\_\_\_\_ Overcast \_\_\_\_\_  
Rain \_\_\_\_\_ Snow \_\_\_\_\_ Wind (over 15 mph) \_\_\_\_\_  
Other \_\_\_\_\_

REMARKS: \_\_\_\_\_

(Other factors affecting fishing)

OBSERVER -----

Figure 3.

Card Type 1  
(cc80)

### CREEL CENSUS

FORM 3600-42

DEPARTMENT OF NATURAL RESOURCES

Interview No. \_\_\_\_\_ Pool and Section No. \_\_\_\_\_  
 Date: Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_  
 Waters \_\_\_\_\_ Habitat Type \_\_\_\_\_  
 Statutory Waters Fished: Wis. \_\_\_\_\_ Minn. \_\_\_\_\_ Ia. \_\_\_\_\_ Multiple \_\_\_\_\_  
 Site: Boat \_\_\_\_\_ Wading or Bank \_\_\_\_\_ Barge \_\_\_\_\_ Ice \_\_\_\_\_  
 Method: Cast \_\_\_\_\_ Still \_\_\_\_\_ Troll \_\_\_\_\_ Multiple \_\_\_\_\_  
 Bait: Minnows \_\_\_\_\_ Worms \_\_\_\_\_ Other Live Bait \_\_\_\_\_ Jig \_\_\_\_\_ Fly \_\_\_\_\_  
       Other Artificial Bait \_\_\_\_\_ Prepared Bait \_\_\_\_\_  
       Multiple (Live & Artificial) \_\_\_\_\_ Sonar \_\_\_\_\_  
 Residence: City \_\_\_\_\_ State \_\_\_\_\_  
               County \_\_\_\_\_  
 Access: Private \_\_\_\_\_ Public \_\_\_\_\_  
 Fishing Trip: Complete \_\_\_\_\_ Incomplete \_\_\_\_\_  
 Sex and Age: Male \_\_\_\_\_ Female \_\_\_\_\_ Age \_\_\_\_\_  
 Time of Day: Morning \_\_\_\_\_ Midday \_\_\_\_\_ Afternoon \_\_\_\_\_

12	1	2	3	4	5	6	7	8	9	10	11	12	a.m.
.	.	.	.	.	.	.	.	.	.	.	.	.	p.m.

Total Hours \_\_\_\_\_  
 Primary Species Sought \_\_\_\_\_

Card Type 2  
(cc80)

SPECIES	CODE	NUMBER CODE
Bluegill	2 8 6	_____
Black Crappie	2 9 1	_____
Yellow Perch	2 5 0	_____
White Crappie	2 9 0	_____
Sauger	2 5 1	_____
Northern Pike	2 0 6	_____
White Bass	2 4 0	_____
Walleye	2 5 2	_____
Largemouth Bass	2 8 1	_____
ROCK BASS	2 0 7	_____
Freshwater Drum	2 0 5	_____
Smallmouth Bass	2 8 0	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____