

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: December 4, 1980

File Ref: 3600

To: District Director - Green Bay

From: [REDACTED] L.M.

Subject: Boom shocker survey of the Embarrass River, Outagamie and Waupaca Counties (1979-80)

The Embarrass River flows from Shawano County through the northeast corner of Waupaca County into northwestern Outagamie County where it enters the Wolf River in New London. This section of the Embarrass River is 35 miles long, covering 413 surface acres (Waupaca County has 8 miles and Outagamie County has 27 miles).

The Embarrass River has an average width of 97 feet ranging from 45 to 180 feet. The depth averaged about two feet during the survey with pools that were 8 to 10 feet deep. The average discharge is 292 cubic feet per second (U.S.G.S. at Village of Embarrass). Velocity of the stream was moderate with only one riffle noted (Survey Station #5). Bottom substrate is dominated by sand with some silt and debris deposits. Streambank vegetation is mostly swamp hardwoods and in some sections fallen trees pose a problem to navigation.

Public access is provided by 11 road crossings with limited parking available. The access is carry-in type except for one boat ramp in the Village of Embarrass. However, access is considered adequate for canoes and small boats. -

The electrofishing survey was conducted with a mini-shocker (14-foot flat bottom boat; 225 v., 3-4 amps, D.C.). Due to a malfunction of the mini-shocker and increased water levels, survey stations 7 and 8 were fished with the regular shocker (20-foot boat). The use of the larger shocker was only possible with the presence of the boat ramp.

The past fishery has been characterized as smallmouth bass, northern pike and walleye. There is also a setline season on catfish.

Approximately 15.75 miles (45%) of the lower Embarrass River were electrofished during September 10-13, 1979 and August 26-28, 1980. The catch of gamefish was dominated by northern pike, smallmouth bass and walleye. Seventy-five northern pike averaging 17.0 inches, ranging 7.0 to 37.9 inches were taken along with 55 smallmouth bass averaging 10.7 inches, ranging 2.3 to 17.4 inches and 52 walleye averaging 16.7 inches, ranging 14.0 to 26.4 inches. Panfish taken during the survey included 64 rock bass, 8 yellow perch, 8 sunfish, 3 crappie and 1 bluegill. Other species included 3 lake sturgeon, 9 channel catfish, 1 flathead catfish and 3 white bass.

A substantial rough fish population was present during the survey. Numbers of rough fish observed were 793 redhorse, 92 suckers, 145 carp, 22 sheepshead, 9 burbot, 5 silver lamprey, 3 dogfish, and 1 quillback. It appears that rough fish dominate the fish populations of the lower Embarrass River.

The results of this survey suggest a minimal fishery exists during the summer months for northern pike, smallmouth bass, and walleye. Northern pike and low numbers of panfish were found in association with beds of aquatic vegetation present in sluggish portions of the stream. Smallmouth bass and walleyes were usually found in the pools or near fallen logs and submerged stumps.

Of special interest, were the three lake sturgeon captured during the survey. Two of these were young-of-the-year, indicating a successful hatch in the Embarrass River the past spring. The presence of lake sturgeon during the survey may indicate a resident population in the Embarrass River.

The shocker survey of the lower Embarrass River gives an indication of the fishery present during the summer months. Stream levels were low during most of the survey allowing maximum efficiency. Therefore, the survey results are felt to be indicative of population levels. However, future sampling techniques on a stream of this size may include chemicals in order to more precisely quantify the fish populations.

The present habitat of the lower Embarrass River does not appear conducive to gamefish. At the present time, there is no practical means of improving the habitat to enhance the warmwater fishery.

LSM:aep

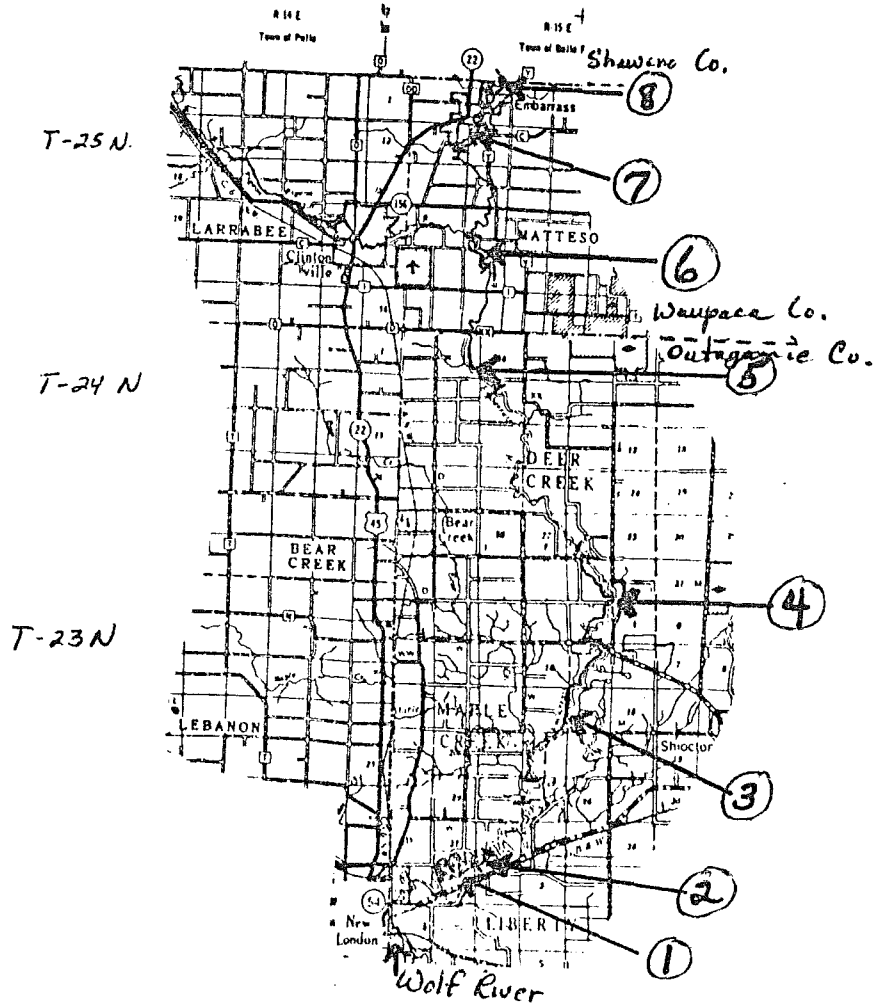
cc - D. Folz
J. Addis
D. Fago

Rennin,

The fish present in survey station #7, which was downstream from the Village of Embarrass, did not appear to be any different than other sections of the river. However, there were two fingerling lake sturgeon and one adult captured in this station.

Lee

Survey Stations on the Embarrass River, 1979 & '80 —
 Outagamie & Waupaca Counties.



SCALE 1:50,000

Number of Fish Captured in the Embarrass River
Outagamie & Waupaca Counties (1979-80)

Species	Station Number								Total
	1	2	3	4	5	6	7	8	
1. Smallmouth bass	3	-	17	10	6	3	11	5	55
2. Northern pike	5	-	8	30	16	3	8	5	75
3. Walleye	12	1	15	13	3	2	3	3	52
4. Channel catfish	4	-	3	1	-	-	-	1	9
5. Lake sturgeon	-	-	-	-	-	-	3	-	3
6. White bass	1	-	2	-	-	-	-	-	3
7. Flathead catfish	1	-	-	-	-	-	-	-	1
8. Largemouth bass	-	-	-	-	1	-	-	-	1
9. Rock bass	18	14	11	8	3	1	4	4	63
10. Pumpk. sunfish	-	-	3	-	4	1	-	-	8
11. Yellow perch	1	1	-	5	-	1	-	-	8
12. Black crappie	-	-	3	-	-	-	-	-	3
13. Shorthead redhorse	33	2	41	40	46	37	27	68	294
14. Silver redhorse	51	6	71	121	93	24	49	82	497
15. Hog sucker	2	-	3	1	13	9	2	38	68
16. White sucker	-	-	4	-	-	1	6	4	15
17. Spotted sucker	1	-	-	2	6	-	-	-	9
18. Sheepshead	23	3	9	4	-	1	3	-	43
19. Carp	22	2	43	21	16	8	18	15	145
20. Dogfish	2	-	-	1	-	-	-	-	3
21. Burbot	1	3	1	-	-	-	3	1	9
22. Quillback	-	-	-	-	-	-	1	-	1
23. Common shiner	2	-	1	2	9	1	-	3	18
24. Emerald shiner	-	2	3	-	1	-	-	3	9
25. Striped shiner	-	-	-	-	-	1	-	-	1
26. Spotfin shiner	-	2	-	1	1	-	-	-	4
27. Silver lamprey	-	-	1	1	-	-	2	1	5
28. Bluegill	-	-	-	-	-	-	1	-	1
29. Black bullhead	-	-	1	1	-	1	-	-	3
30. Yellow bullhead	-	2	-	-	-	-	-	-	2
31. Golden shiner	-	-	-	-	-	-	-	1	1
Total:	182	38	240	262	218	94	141	234	1409

SUMMARY SHEET

Summary

Total Miles Shucked = 15.75 miles

INCHES

COUNTY <i>Outagamie, Waupaca Shawano</i> COUNTY CODE _____		WATER <i>Embarrass River</i> WATER CODE _____				DATE <i>Sept. 10-13, 1979 Aug. 26-28, 1980</i>		GEAR <i>Mini-shocker & Boomshocker</i>	
SIZE RANGE INCHES	SPECIES				SIZE RANGE INCHES	SPECIES			
	<i>Smallmouth Bass</i>	<i>Northern Pike</i>	<i>Walleye</i>	<i>Channel Catfish</i>		<i>Northern Pike</i>			
<3.0	1 (2.3")				27.0-27.4	1			
3.0-3.4	1				27.5-27.9				
3.5-3.9					28.0-28.4	1			
4.0-4.4	1				28.5-28.9				
4.5-4.9					29.0-29.4				
5.0-5.4	2				29.5-29.9				
5.5-5.9					30.0-30.4	1			
6.0-6.4					30.5-30.9				
6.5-6.9	1				31.0-31.4				
7.0-7.4	1				31.5-31.9				
7.5-7.9	5				32.0-32.4				
8.0-8.4	6				32.5-32.9				
8.5-8.9	2				33.0-33.4				
9.0-9.4	4				33.5-33.9				
9.5-9.9	4				34.0-34.4				
10.0-10.4	1				34.5-34.9				
10.5-10.9	3				35.0-35.4				
11.0-11.4	3				35.5-35.9				
11.5-11.9	2	1			36.0-36.4	1			
12.0-12.4	2	3			36.5-36.9				
12.5-12.9		1			37.0-37.4				
13.0-13.4	1	1		1	37.5-37.9	1			
13.5-13.9	1	5			38.0-38.4				
14.0-14.4	3	7	3	2	38.5-38.9				
14.5-14.9	2	10	4		39.0-39.4				
15.0-15.4	1	7	3	1	39.5-39.9				
15.5-15.9		7	9		40.0-40.9				
16.0-16.4	2	3	11	3	41.0-41.9				
16.5-16.9	1	6	5		42.0-42.9				
17.0-17.4	3	2	1		43.0-43.9				
17.5-17.9		2	2		44.0-44.9				
18.0-18.4		1	3		45.0-45.9				
18.5-18.9		4	1		46.0-46.9				
19.0-19.4		1			47.0-47.9				
19.5-19.9		1			48.0-48.9				
20.0-20.4			1		49.0-49.9				
20.5-20.9		2		1	50.0-50.9				
21.0-21.4		2			51.0-51.9				
21.5-21.9		1			52.0-52.9				
22.0-22.4		2			53.0-53.9				
22.5-22.9		1			54.0-54.9				
23.0-23.4			1		55.0-55.9				
23.5-23.9			2	1	56.0-56.9				
24.0-24.4		1	2		57.0-57.9				
24.5-24.9			1		58.0-58.9				
25.0-25.4			1		59.0-59.9				
25.5-25.9			1		60.0+				
26.0-26.4		1	1						
26.5-26.9									
TOTAL	55		52	9	TOTAL	75			

Lake Sturgeon (3): 8.0", 8.3", 55.0" White Bass (3): 13.4", 13.8", 12.5" Flathead Catfish (1): 6.3" Largemouth Bass (1) 2.

SUMMARY

Summary

INCHES

COUNTY Dodge, Waupaca, Shawano WATER Embarrass River DATE Sept 10-13, 1979 GEAR Mini-shocker & Beamshocker
COUNTY CODE _____ WATER CODE _____ Aug. 26-28, 1980

SIZE RANGE INCHES	SPECIES				SIZE RANGE INCHES	SPECIES	
	Silver Redhorse	Shorthead Redhorse	Sheepshead	Carp		Other Species	
<3.0					27.0-27.4		1. Dogfish - 3 (16.0", 16.4")
3.0-3.4					27.5-27.9		
3.5-3.9					28.0-28.4		
4.0-4.4					28.5-28.9		2. Hog sucker - 68 (20 measured; Ave length 11.0")
4.5-4.9					29.0-29.4		
5.0-5.4					29.5-29.9		
5.5-5.9					30.0-30.4		
6.0-6.4	1				30.5-30.9		3. Spotted sucker - 9 (7.0", 14.3", 10.6", 10.4", 15.5")
6.5-6.9	2				31.0-31.4		
7.0-7.4	4				31.5-31.9		
7.5-7.9		1			32.0-32.4		
8.0-8.4		1			32.5-32.9		4. White sucker - 15 (13.8")
8.5-8.9	1	1			33.0-33.4		
9.0-9.4	1				33.5-33.9		
9.5-9.9	8	1			34.0-34.4		5. Barbat - 9 (11.7", 10.0", 17.3", 15.6", 12.0")
10.0-10.4	8	2			34.5-34.9		
10.5-10.9	3	3			35.0-35.4		
11.0-11.4	5	1			35.5-35.9		
11.5-11.9		1			36.0-36.4		6. Quilback - 1 (18.2")
12.0-12.4	6	2	1		36.5-36.9		
12.5-12.9	4		3		37.0-37.4		
13.0-13.4	5	16	2		37.5-37.9		7. Common shiner - 19
13.5-13.9	2	5			38.0-38.4		
14.0-14.4	7	4	6		38.5-38.9		8. Emerald shiner - 9
14.5-14.9	8	2			39.0-39.4		
15.0-15.4	7	7	2		39.5-39.9		9. Striped shiner - 1
15.5-15.9	4	8	1		40.0-40.9		
16.0-16.4	4	5	2	1	41.0-41.9		10. Spittin shiner - 5
16.5-16.9	5	3			42.0-42.9		
17.0-17.4	3	5	2		43.0-43.9		11. Silver lamprey - 5
17.5-17.9	3				44.0-44.9		
18.0-18.4	4	1	2	1	45.0-45.9		12. Golden shiner - 1
18.5-18.9	6				46.0-46.9		
19.0-19.4	3	1			47.0-47.9		
19.5-19.9	1				48.0-48.9		
20.0-20.4	4			1	49.0-49.9		
20.5-20.9	2				50.0-50.9		
21.0-21.4	1			2	51.0-51.9		
21.5-21.9	1				52.0-52.9		
22.0-22.4	1		1	2	53.0-53.9		
22.5-22.9				1	54.0-54.9		
23.0-23.4		1		4	55.0-55.9		
23.5-23.9				4	56.0-56.9		
24.0-24.4				2	57.0-57.9		
24.5-24.9				3	58.0-58.9		
25.0-25.4				2	59.0-59.9		
25.5-25.9				1	60.0+		
26.0-26.4				3			
26.5-26.9							
TOTAL	114 (4389 not measured)	61 (236 not measured)	22 (78 not measured)	28 (4117 not measured)	TOTAL		
Total Observed	497	296	40	145			

ANFISH LENGTH FREQUENCY

SUMMARY

DEPARTMENT OF NATURAL RESOURCE

FORM 3600-64

COUNTY *Outagamie, Waupaca* WATERS *Embarrass River* DATE *Sept 10-13, 1979* GEAR *Mini-Shocker*
Aug, 26-28, 1980 *Boomshocker*

Size Range	SPECIES			Size Range	SPECIES		
	<i>Rockbass</i>	<i>P. Sunfish</i>			<i>Rockbass</i>	<i>Y. perch</i>	<i>Bl. Crappie</i>
1				7.0	5		
.4				7.1	3		
1.9				7.2	2		
.0				7.3	2		
.1				7.4	2		
.2				7.5	2	1	1
.3				7.6	2	1	
.4				7.7	3		1
.5				7.8	1	1	
.6				7.9	1		
.7				8.0	3		
.8				8.1	1	1	
.9				8.2			
0	1	2		8.3		1	
1				8.4			1
2				8.5			
3				8.6		1	
4				8.7		1	
5				8.8			
6				8.9			
7				9.0		1	
8				9.1			
9				9.2			
0				9.3			
1				9.4			
2	1	1		9.5			
3		1		9.6			
4				9.7			
5				9.8			
6	1			9.9			
7				10.0			
8				10.1			
9	1			10.2			
0	4	2		10.3			
1	1			10.4			
2				10.5			
3	1			10.6			
4	1	2		10.7			
5	1	1		10.8			
6	2			10.9			
7	3	1		11.0			
8	1			11.1			
9				11.2			
0	2	8		11.3			
1				11.4			
2	1			11.5			
3	2			11.6			
4	2			11.7			
5	3			11.8			
6	4			11.9			
7	2			>12			
8	2						
9				Total	64	8	3

Bluegill(1) 4.2" Bl. bullhead(?) 8.0" 7.1" 5.0" Yellow bullhead(2) 7.2" 7.7"