



**FISHERIES
STREAM POPULATION ASSESSMENT**

REGION 5	AREA Lake City	STREAM NAME Salem Creek	TRIBUTARY NO. M-34-82	LENGTH 20.8 miles
COUNTY Olmsted, Dodge		WATERSHED NAME, NO. Zumbro River, 34	SOURCE (T.R.S) T106N R17W S26	MOUTH (T.R.S) T106N R15W S24

DATE(S) OF ASSESSMENT: 8/15/00

REASON FOR ASSESSMENT: Assess the presence or absence of smallmouth bass and their size structure in a selected reach of the river using angling techniques.

SIMILAR REACH	STATION*	STREAM MILE	LENGTH	AVE. WIDTH**	ACRES
II	10.1	13.2-10.1	3.1 mi.	39 ft.	14.7

SUMMARY: This assessment is a follow up to the reconnaissance survey completed in 1997. That survey was undertaken to determine current information on physical stream habitat for the entire stream, noting in particular, reaches containing good smallmouth bass habitat. Actual sampling of smallmouth bass was only completed in a cursory manner. Information from the 1997 reconnaissance was used to determine which stream miles would be most effectively sampled by angling.

Data collected during this assessment cannot be used comparatively with historic data because it is the first time angling was used to sample smallmouth bass. Estimates of relative abundance from these data should not be used to describe the fishery at this time. This may change in the future if methods can be standardized and sampling precision improves. Up to date documentation of reach-specific presence or absence of smallmouth bass and larger sample sizes (producing more accurate length frequencies) was the goal of this assessment. The stream miles sampled were chosen because they had been judged to contain good smallmouth bass habitat from previous reconnaissance surveys.

* Denotes the downstream end-point (stream mile) where sampling ended.

** Taken from previous surveys.

Stream Salem CreekDate August 2000

Length Frequency Distribution

Species/Station Total length (in)	SMB Mile 10.1			
3.0 - 3.4				
3.5 - 3.9				
4.0 - 4.4				
4.5 - 4.9	1			
5.0 - 5.4				
5.0 - 5.9				
6.0 - 6.4	6			
6.5 - 6.9	2			
7.0 - 7.4	6			
7.5 - 7.9				
8.0 - 8.4				
8.5 - 8.9	1			
9.0 - 9.4	5			
9.5 - 9.9	5			
10.0 - 10.4	8			
10.5 - 10.9	5			
11.0 - 11.4	5			
11.5 - 11.9	1			
12.0 - 12.4	4			
12.5 - 12.9	1			
13.0 - 13.4				
13.5 - 13.9				
14.0 - 14.9				
15.0 - 15.9	1			
16.0 - 16.9	2			
17.0 - 17.9				
18.0 - 18.9				
19.0 - 19.9				
20.0 - 20.9				
21.0 - 21.9				
22.0 - 22.9				
23.0 - 23.9				
24.0 - 24.9				
25.0 - 25.9				
26.0 - 26.9				
27.0 - 27.9				
Total	53			

DISCUSSION OF THE FISHERY

Summary: A total of 3.1 miles of stream (similar reach II) was thoroughly sampled for smallmouth bass, with high quality habitat areas receiving concentrated effort. Water conditions were low and very clear for all days sampled. A total of 53 smallmouth bass ranging from 4.5 to 16.1 inches were collected. Size structure, as measured by PSD and RSD14 was 32 and 7, and mean length was 9.6 inches.

Streamflow conditions were so low during time of sampling that main-channel pools were nearly isolated from each other. Riffles were less than one inch deep in some places and were effective barriers to adult smallmouth bass. Individual condition of smallmouth sampled however, appeared fine. Common shiner and crayfish (preferred smallmouth bass forage) were present throughout.

Based on field notes, there was evidence suggesting a positive relationship between pool size (depth and area) and size of smallmouth present. The two largest pools in the stretch held the two largest smallmouth collected. Even under degraded conditions from direct agricultural runoff (feedlot/barn at mile 12.5) large smallmouth bass were present.

This assessment demonstrates the effectiveness of angling as a sampling tool for smallmouth bass in Salem Creek. The stream is capable of producing a high quality smallmouth bass fishery that is capable of withstanding light fishing pressure. Because of the size of the stream, the fishery is highly vulnerable to the negative impacts of angling exploitation, especially during dry conditions. Couple this with the potential water quality problems associated with agricultural runoff and you have a very fragile fisheries resource. For these reasons, a heightened awareness/protection plan should be written into the Stream Management Plan and carried out through the environmental review program.

Credits and Signatures:

Field Crew: Al Schmidt, Mark Stopyro

Report Completed by:

Name Al Schmidt

Title Fisheries Specialist

Date 3/7/01

APPROVED BY:

Area Supervisor's Signature

Regional Fisheries Manager's Signature

Date

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5/14/01