



**Minnesota Department of Natural Resources
Section of Fisheries
Stream Population Assessment**

Region 3	Area Lake City	Stream Name Main Zumbro River	Tributary No. M-34	Length (mi) 57.6
County Wabasha		Watershed Name, No. Zumbro, 41	Source (T-R-S) 109 - 14 - 27	Mouth (T-R-S) 110 - 9 - 31

Date(s) of Assessment: 5/18, 5/22 and 5/25/2006.

Assessment Purpose: To sample smallmouth bass as part of a long-term monitoring program.

Station	Similar Reach	Stream Mile	Length (ft)	Mean Width (ft)	Acres
Klein's	II	55.7 - 54.1	8448	125*	32

* Measured using Landview

Summary:

Sampling was completed between 18 May and 25 May 2006. Estimated smallmouth bass abundance using a 3-run Modified Schnabel estimate was 502 (CI=389-647). Other catch information for 2006 and historical comparisons to past electrofishing (1997-2006) can be found on pages 5 through 7.

Abundance and size structure

The smallmouth bass population in the Zumbro River at Klein's Station has been monitored annually for the past 11 years. Data show abundance has remained stable (Figures 1 and 2), and size structure has been slightly increasing (Figures 3 and 4 and Table 1). Relative abundance data are less variable than Schnabel estimates (Figure 2), and probably do not accurately reflect fluctuations in population density; trend lines however are similar for all three abundance estimators (Figure 2).

Stream _____ Main Zumbro
 Tributary Number _____ M-34

Fishery Characteristics

Station	Klein's					
Date	Spring '06					
Gear	2 Pulsed DC Boats					
EFFORT (FEET)	8448 (3 runs)					
Species	No.	Wt (lb)				
Smallmouth bass *	264	--				
Northern pike	45	--				
Muskellunge	26**	--				
Channel catfish	17	--				
Brown trout	40	--				
White bass	10	--				
Rock bass	32	--				
Black crappie	10	--				
Bluegill	25	--				
Sauger	9	--				
Walleye	2	--				

* Actual number of SMB collected in three runs, minus recaps.

** Several of the 26 recorded as sightings.

Length Class Distributions

Klein's, spring 2006

Stream Main Zumbro
Tributary Number M-34

Species	SMB	CCF	BLG	RKB	SAR	WAE	WHB	NOP	BNT
Date	2006	2006	2006	2006	2006	2006	2006	2006	2006
Length Class									
< 6.0			2						
6.0 - 6.9			7	17					1
7.0 - 7.9	77		12	12					1
8.0 - 8.9	33		4	3					1
9.0 - 9.4	10								
10.0 - 10.9	25				1		1		
11.0 - 11.9	17					1			1
12.0 - 12.9	20				2		2		5
13.0 - 13.9	32				1	1	2		6
14.0 - 14.9	31				3		5		4
15.0 - 15.9	13								2
16.0 - 16.9	3								4
17.0 - 17.9	3								5
18.0 - 18.9					1				5
19.0 - 19.9		1			1				2
20.0 - 20.9		2						2	1
21.0 - 21.9								2	1
22.0 - 22.9		1						1	1
23.0 - 23.9		2						2	
24.0 - 24.9		2						3	
25.0 - 25.9		4						3	
26.0 - 26.9		3						7	
27.0 - 27.9		1						7	
28.0 - 28.9								3	
29.0 - 29.9								3	
30.0 - 34.9		1						11	
35.0 - 39.9								1	
40.0 - 44.9									
45.0 +									
Mean length	10.7	24.6	7.3	7.0	14.5	12.4	13.3	27.3	15.3
Sample size	264	17	25	32	9	2	10	45	40

Length Class Distributions

Klein's, spring 2006

Stream Main Zumbro
Tributary Number M-34

Species	MUE*	BLC							
Date	2006	2006							
Length Class									
< 6.0		2							
6.0 - 6.9		1							
7.0 - 7.9		1							
8.0 - 8.9		1							
9.0 - 9.4		3							
10.0 - 10.9		2							
11.0 - 11.9									
12.0 - 12.9									
13.0 - 13.9									
14.0 - 14.9									
15.0 - 15.9									
16.0 - 16.9									
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	2								
28.0 - 28.9									
29.0 - 29.9									
30.0 - 34.9	1								
35.0 - 39.9	15								
40.0 - 44.9	8								
45.0 +									
Mean length	38.0	8.4							
Sample size	26	10							

* Several muskellunge lengths were visually estimated

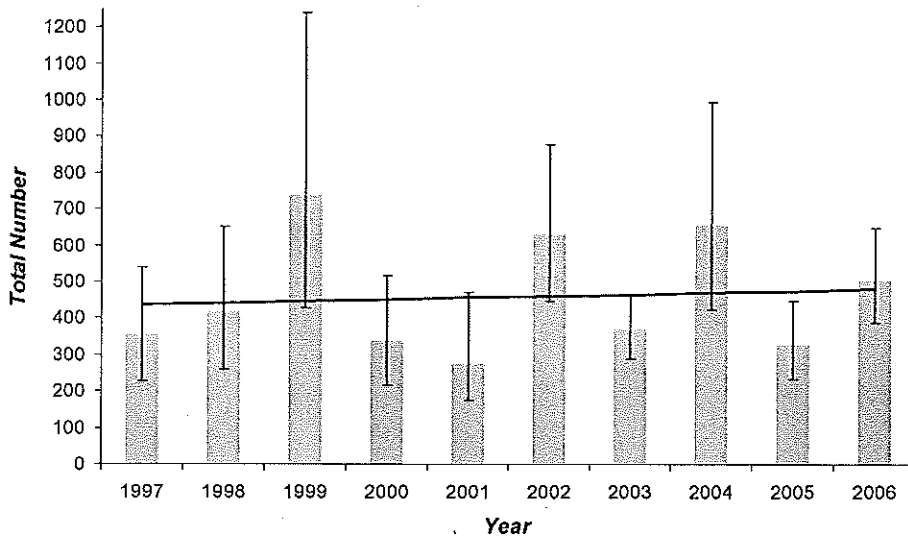


Figure 1. Modified Schnabel (3-run) estimates with trend line for Main Zumbro River, Klein's Station, spring sampling 1997-2006 (95% CL error bars shown).

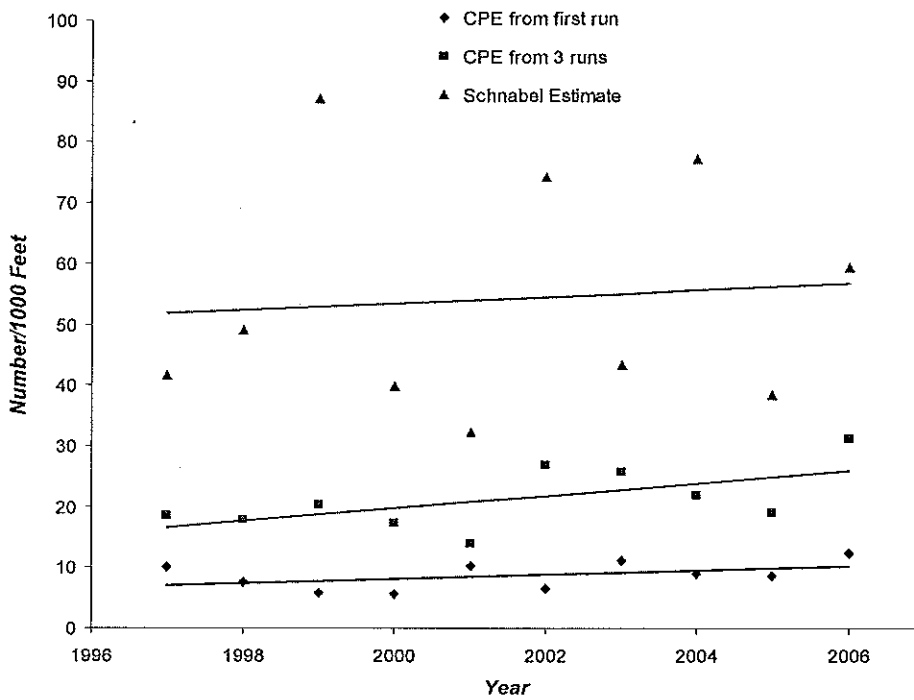


Figure 2. Abundance estimate comparisons with trend lines, Klein's Station, Main Zumbro River, spring sampling 1997-2006.

Stream Main Zumbro
Tributary Number M-34

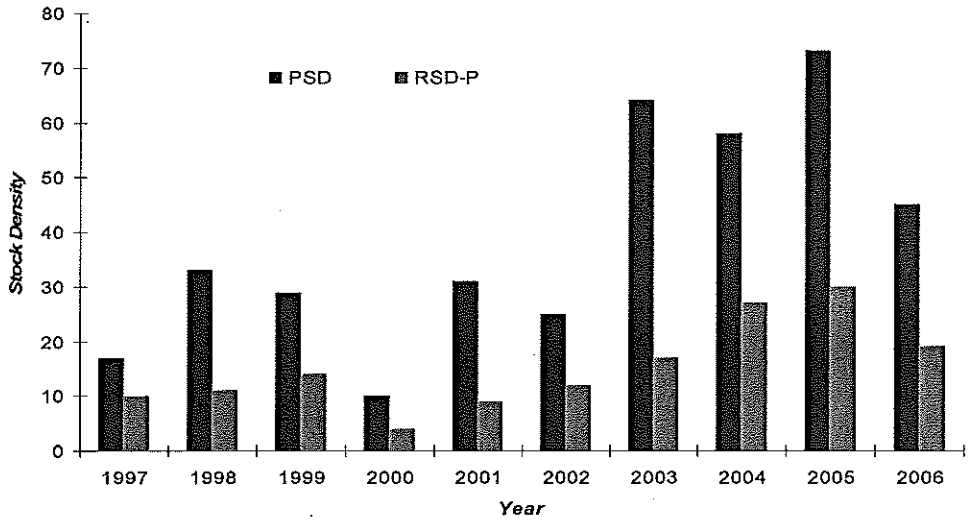


Figure 3. Size structure comparisons , Klein's Station, Main Zumbro River, spring 2006 sampling.

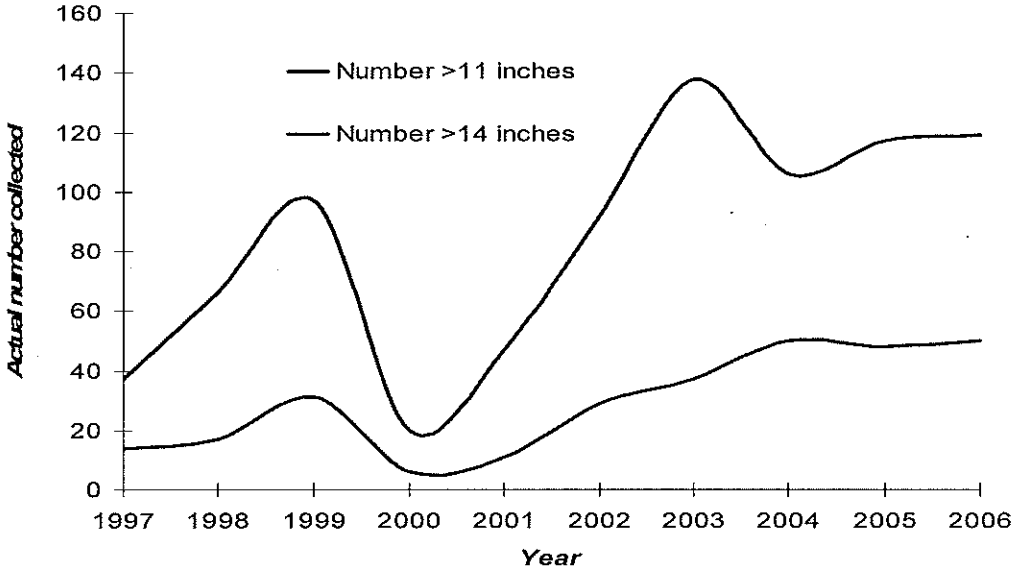


Figure 4. Abundance comparisons of smallmouth bass ≥ 11 inches and ≥ 14 inches, Klein's Station, Main Zumbro River, spring sampling.

Stream Main Zumbro
 Tributary Number M-34

	1997	1998	1999	2000	2003	2004	2005	2006
Length (inches)								
7-7.9	12	19	19	39	9	5	12	29
8-8.9	25	11	12	27	6	3	5	13
9-9.9	29	10	9	13	11	6	2	4
10-10.9	7	16	16	7	11	6	7	9
11-11.9	7	22	13	4	19	10	13	6
12-12.9	3	9	10	4	18	9	12	8
13-13.9	6	2	7	2	10	5	18	12
14-14.9	8	6	7	4	6	3	11	12
15-15.9	0	2	2	0	6	3	9	5
16-16.9	0	2	2	1	3	2	7	1
17-17.9	1	1	2	0	1	1	1	1
18-18.9	1	1	0	0	1	0	1	0
19-19.9	1	0	0	0	0	0	0	0
Total catch	139	150	226	138	217	184	161	264

Table 1. Percent length-frequency distribution and total catches of smallmouth bass in Klein's Station, Main Zumbro River, spring sampling, 1997-2006.

Age (N)	I	II	III	IV	V	VI
Main Zumbro River *	4.1 (149)	7.0 (168)	9.9 (133)	12.1 (115)	13.9 (48)	14.8 (20)
Lower Cannon River	4.1 (84)	7.3 (51)	10.5 (36)	12.5 (25)	14.8 (7)	16.2 (2)
North Branch Root River	4.1 (54)	6.5 (53)	9.2 (24)	10.5 (10)	12.6 (2)	13.4 (1)

*Combined with 2005 data.



Table 2. Mean length (inches) at age comparisons for smallmouth bass collected from three southeastern Minnesota warmwater rivers, 2006.

	Main Zumbro R.	North Br. Root R.	Lower Cannon R.
Population Estimate (95% CI)	502 (389-647)	436 (281-669)	260 (154-430)
PSD	45	15	44
RSD-P	19	2	21
Mean length at age IV (in)	12.1	10.5	12.5
Mean length (in)	10.7	9.1	10.8
Mean weight (lbs)	0.8	0.41	0.83
Standing stock (lbs/ac)	12.5	10.7	9.02
Mean relative wt ($W_r S$)	101	108	101
Mean relative wt ($W_r Q$)	97	73	96
Mean relative wt ($W_r P$)	91	80	101
Mean relative wt ($W_r M$)	75	—	102
Total mortality (%)	60	65	56

Table 3. A comparison of smallmouth bass population characteristics for three southeastern Minnesota warmwater Rivers, 2006.

Stream Main Zumbro
 Tributary Number M-34

Credits and Signatures

Field Crew: Al Schmidt, Joe McGee, Dan Dieterman, Dale Sogla, John Hoxmeier, Kevin Stuafter, Randy Binder, Doug Dieterman.		
Report Completed by:		
Name: Al Schmidt	Title: Fisheries Specialist	Date:
Approved by:		
Area Fisheries Supervisor  4-19-07	Regional Fisheries Manager's Signature 	Date 