



**MINNESOTA DEPARTMENT OF NATURAL RESOURCES**  
**DIVISION OF FISH AND WILDLIFE**  
**STREAM ASSESSMENT REPORT**

**Report Date:** January 21, 2013

Region	Area	Stream Name	Tributary No.	Stream Length
3	Lake City	East Indian	M-32	10.6 miles
County	Watershed Name, No.	Source (T, R, S)	Mouth (T, R, S)	
Wabasha	Miss. R. Winona, 40	T109N,R10W,S31	T109N,R9W,S19	

**Date of Assessment:** September 24, 2012

**Assessment Purpose:** Long Term Monitoring

Station	Similar Reach	Stream Mile	Length (ft)	Mean Width (ft)	Acres	Water Temp (°F)	Air Temp (°F)	Downstream UTM's	
								utmX (↔)	utmY (↓)
7	2	7	687	17.82	0.28			577838	4896292

**Summary:**

Station 7.0 on East Indian Creek is one of 23 stations in the Long-Term Monitoring program in southeast Minnesota.

Estimates were obtained for trout by using a two pass depletion method using a stream shocking barge. East Indian Creek contains brook and brown trout. Adult brook trout abundance was estimated to be 3,442/mile with 77/mile  $\geq 10$  inches. Recruit brook trout abundance was estimated at 4,110/mile. Total brook trout biomass was 314.1lbs/acre.

One adult brown trout and no recruits were found in this survey.

There were no white suckers sampled in this survey.

**Fishery Characteristics – Population Estimates**

Station: 7      Date: 9/24/2012      Gear: Shocking Barge      Method: Electrofishing      Station length (ft): 687

<b>Brook Trout</b>			
In Station			
	Recruits	Adults	Total
n	535	448	983
95% CI	31.86	10.81	
Per Mile			
	Recruits	Adults	Total
n	4110	3442	7552
	≥ 10 inches		
n	77		
95% CI	0.00		
Per Acre			
	Recruits	Adults	Total
n	1905	1595	3500
lbs	59.8	254.3	314.1

Length (in)	Brook Trout	Brown Trout	White Sucker
1			
2	12		
3	153		
4	237		
5	111		
6	142		
7	114		
8	93	1	
9	45		
10	9		
11	1		
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30+			
<b>Total</b>	917	1	0

**Other species sampled:**

Common Name	Number Sampled
brook stickleback	4
central mudminnow	1

**Discussion of Fishery:**

Station 7 on East Indian Creek is one of the stations in the Long-Term Monitoring (LTM) program in southeast Minnesota. This station has been assessed every year in the fall since 1980.

There was one adult brown trout sampled in this survey. No brown trout recruits were sampled. This is the third year in a row that brown trout recruits were not sampled in this station.

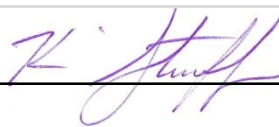
The brook trout recruits/mile was estimated at 4,110 (Table 1). The last five years (2008-2012) estimates were much higher than the mean of 1,740/mile (Table 1). The adult brook trout population was estimated at 3,442 trout/mile, which is the highest estimate of any survey on this station (Table 1). There was an estimated 77 brook trout/mile  $\geq 10$  inches which is well above the mean of 43/mile. There were 314.1 lbs/acre of brook trout (Table 1), which is well above the mean of 94.4 lbs/acre (Table 1).

The Coldwater Index of Biotic Integrity (Mundahl and Simon 1998) score in 2012 for station 7 was 115 (Table 2). This score puts this station in the “excellent” category. There were no white suckers collected in this station. This is the third year in a row that no white suckers were sampled. Brook stickleback and central mudminnow were also sampled. This is the first time a central mudminnow was sampled in the long term station. Central mudminnow were sampled at another location on East Indian Creek in 1990 but have not been documented in any other sampling on record.

The Minnesota Stream Habitat Assessment (MSHA) score for station 7 was 68 (Table 2). This is the same as the prior year due to no change in surrounding land use and an unchanged stream channel. The only notable difference in the long term station stream channel was the greater abundance of water cress. This may have increased sediment retention somewhat, but not enough to change the score from the prior year.

Due to the low numbers of adult brown trout and the lack of recruits in the upper stations, an updated management plan should focus on managing for brook trout only in the upper reaches of East Indian Creek. East Indian is tested annually for fish diseases and has tested negative for at least three consecutive years. Brook trout from this stream may be used for hatchery broodstock and transfers to other streams.

**Credits and Signatures:**

<b>Field Crew:</b>		
Randy Binder, John Hoxmeier, Dan Spence		
<b>Report completed by:</b>		
<b>Name:</b>	<b>Title:</b>	<b>Date:</b>
Dan Spence	Fisheries Specialist	21-Jan-13
<b>Approved by:</b>		
<b>Area Fisheries Supervisor's Signature</b>	<b>Regional Fisheries Manager's Signature</b>	<b>Date:</b>
		

**Coldwater Index of Biotic Integrity (Mundahl and Simon 1998)**

<u>Metric (Max Score)</u>	<u>Value (Score)</u>
Total Captured	917
Number of Species (10)	4 (10)
Number of Coldwater Species (10)	3 (5)
Number of Minnow Species (10)	0 (10)
Number of Benthic Species (10)	0 (10)
Number of Tolerant Species (10)	1 (10)
Percent Salmonids as Brook Trout (10)	99.89 (10)
Percent Intolerant Individuals (10)	99.34 (10)
Percent Coldwater Individuals (10)	99.89 (10)
Percent White Suckers (10)	0 (10)
Percent Top Carnivores (10)	99.45 (10)
Number of Coldwater Individuals per 150m (10)	656.16 (10)
Number of Warmwater Individuals per 150m (10)	0.71 (10)
<b>TOTAL IBI SCORE (120 maximum)</b>	<b>115</b>
Percent of maximum score	95.83

**Stream Characteristics – Minnesota Stream Habitat Assessment (MSHA)**

MSHA Metric	Component score maximum	Component score
Surrounding Land Use	5	4
Riparian Zone	15	10
Instream Zone - Substrate	27	10
Instream Zone - Cover	17	13
Channel Morphology	36	31
	100	<b>MSHA Score</b> (Max = 100)
		<b>68</b>

Table 1. Trends in brook trout population metrics for East Indian Creek, years 1981-2012

Station	River Mile	Similar Reach	Date	No./mile (Adult)	No./mile (Recruits)	No./mile ( $\geq 10$ in.)	lbs/acre (all sizes)
<b>7</b>	<b>7</b>	<b>2</b>	<b>9/24/2012</b>	<b>3442</b>	<b>4110</b>	<b>77</b>	<b>314.1</b>
7	7	2	9/22/2011	2452	2794	41	94.4
7	7	2	9/30/2010	111	3144	23	69.56
7	7	2	9/21/2009	935	4388	8	148.92
7	7	2	9/22/2008	988	4474	69	171.5
7	7	2	9/24/2007	1380	1332	15	110.49
7	7	2	10/3/2006	898	7080	168	292.34
7	7	2	9/26/2005	784	938	48	127.51
7	7	2	9/13/2004	331	1366	48	86.3
7	7	2	9/25/2003	261	1707	24	83.42
7	7	2	9/17/2002	282	293	64	36
7	7	2	9/19/2001	277	1429	27	83.25
7	7	2	9/25/2000	698	2709	0	167.5
7	7	2	9/23/1999	684	3063	16	151.3
7	7	2	9/25/1998	1001	2611	40	198.58
7	7	2	9/29/1997	522	4757	41	220.4
7	7	2	9/27/1996	1075	715	49	188.1
7	7	2	10/5/1995	876	1970	104	180
7	7	2	9/30/1994	813	1162	25	97
7	7	2	9/15/1993	413	1047	0	48
7	7	2	10/22/1992	624	1029	-	72
7	7	2	9/4/1991	331	2268	-	31
7	7	2	9/26/1990	64	1056	-	7
7	7	2	10/9/1989	202	294	-	17
7	7	2	9/26/1988	459	386	-	54
7	7	2	9/9/1987	406	349	-	45
7	7	2	9/18/1986	219	1015	-	38
7	7	2	9/4/1985	633	390	-	45
7	7	2	9/17/1984	195	65	-	22
7	7	2	9/14/1983	114	57	-	19
7	7	2	9/7/1982	138	65	-	13
7	7	2	9/4/1981	41	8	-	10
			<b>Fall Mean</b>	<b>587</b>	<b>1740</b>	<b>43</b>	<b>94.4</b>

Table 2. Trends in Index of Biotic Integrity (Mundahl and Simon 1998) and Minnesota Stream Habitat Assessment (Fisheries Stream Survey Manual 2007) scores for East Indian Creek, years 2003-2012

Station	River Mile	Similar Reach	Date	IBI	Land Use	Riparian Zone	Instream Substrate	Instream Cover	Channel Morphology	Final Score
7	7	2	9/24/2012	115	4	10	10	13	31	68
7	7	2	9/22/2011	115	4	10	10	13	31	68
7	7	2	9/30/2010	100	4.5	8	19	14	27	72.5
7	7	2	9/21/2009	95	4	8.5	16.4	15	25	68.9
7	7	2	9/22/2008	95	4	8	17	10	23	62
7	7	2	9/24/2007	60	4	8	15.7	7	22	56.7
7	7	2	10/3/2006	80	-	-	-	-	-	-
7	7	2	9/26/2005	85	-	-	-	-	-	-
7	7	2	9/13/2004	100	-	-	-	-	-	-
7	7	2	9/25/2003	85	-	-	-	-	-	-

References

Fisheries Stream Survey Manual. 2007. Special Publication No. 165. Minnesota Department of Natural Resources.

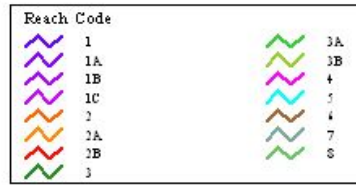
Mundahl, N.D., and T.P. Simon. 1998. Development and application of an index of biotic integrity for coldwater streams of the upper Midwestern United States. Pages 383-415 In Thomas P. Simon (ed.). Assessing the Sustainability and Biological Integrity of Water Resources Using Fish Communities. CRC Press, Boca Raton, Florida.

Location map for Long Term Monitoring station.

# East Indian Creek

## M-32

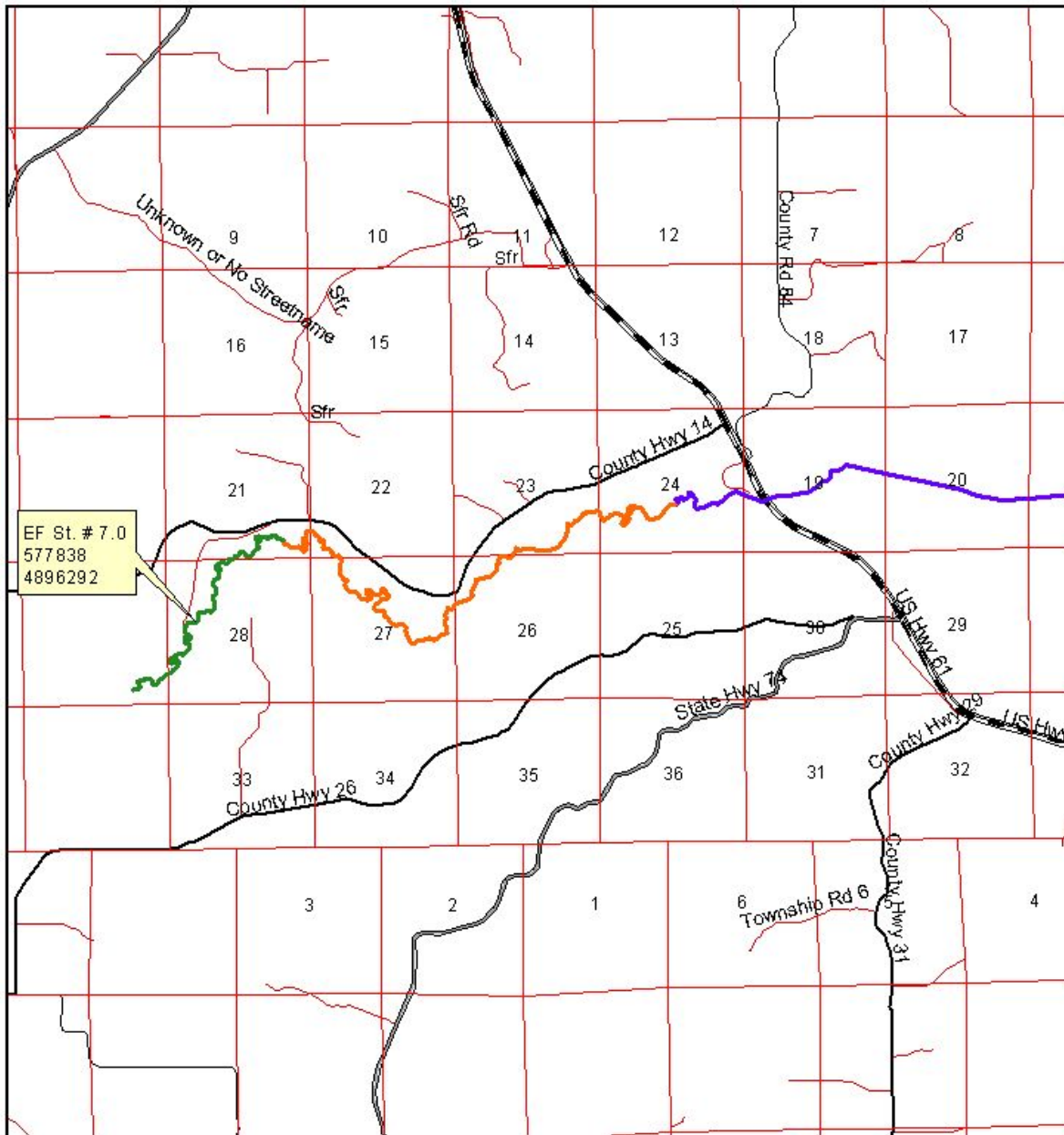
Date: January 05, 2009  
 Map For: Population Assessment  
 Prepared By: Jim Melander  
 Fisheries Office: Lanesboro  
 Mouth TRS: 109-9-19  
 Source TRS: 109-10-31  
 Counties: Wabasha



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 MN Dept. of Natural Resources  
 Division of Fisheries



Electrofishing Station Location



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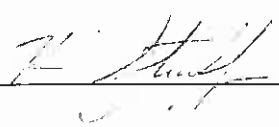

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		6-11-13