

Minnesota
F-29-R(P)-24
Area 315
Study 3
March 2007

**Minnesota Department of Natural Resources
Division of Fish and Wildlife
Section of Fisheries**

Stream Survey Report

**Stony Creek
2006**

Montrose Area Fisheries Office



Your purchase of fishing equipment
and motor boat fuel supports boating
access and Sport Fish Restoration.



General Information

Stream Name: Stony Creek

Alternate Name:..... none

Tributary Number:..... M-74-035

Counties: Stearns

Quad Maps: Greenwald, Elrosa

Source of flow: Wetlands near Elrosa, springs

Waterway sequence: Stony Creek / Sauk River / Mississippi River / Gulf of Mexico

Stream Length: 10.2 miles

Gradient:..... 14.2 feet per mile (EF 1 to EF 3)

Sinuosity:..... 1.68 (EF 1 to EF 3)

Classification: Class I C/D (Semi-wild or Marginal Trout)

Watershed Description

Watershed Name and Number

Major: Mississippi River — Sauk (#16)

Minor: 16046

Watershed Land Use: The land use is 83% agriculture, 10% pasture, 3% forest, and 2% residential/farmstead, based on 1990 data.

Riparian Zone: The land is gently rolling and the gradient increases as the stream nears the Sauk River. The riparian area is primarily pasture and agriculture. The stream is largely unshaded, although overhanging grasses provide some shade. Cattle have impacted the stream bank in some areas and the stream has also been channelized in a few places.

Summary and recommendations

Stony Creek is a small tributary to the Sauk River in western Stearns County. A reconnaissance survey was undertaken in August 2000 to assess the condition of the stream and fish community. Fifteen fish species were captured from three electrofishing stations. Species diversity and temperature were lower at upstream stations. In these areas, banks were impacted by cattle grazing and the result was large silt deposits in pools.

Stony Creek was formerly designated as a trout stream and landowners indicated that brook trout had previously been common in the creek. The trout stream designation was removed in 1977 and reports indicate that channelization and water appropriation occurred prior to this. No trout were captured in 2000, but water temperatures recorded in August indicated the potential for re-introducing trout in Stony Creek.

Stream temperature monitors were deployed annually during 2001-2006 (Figure 1; Table 2) to assess temperature profiles throughout the season. Monitor failure or loss resulted in no data in 2004 and the loss of some stations in other years. Temperature monitors from the same locations were compared. The temperature profile in 2006 was favorable at the uppermost station. The maximum temperature was 22.3 °C and few readings were above 20 °C (Figure 2). All readings above 20 °C were in late May during unusually warm weather. Drought conditions prevailed during summer 2006. At the middle station, the maximum temperature was 22.6 °C, but many more readings were above 20 °C (34 hourly readings > 20 °C in the upper station versus 155 readings >20 °C at the middle station. The temperature monitor at the middle station failed and was replaced on June 28, so the hot weather in late May was not recorded. The number of readings above 20 °C would have been higher if these data were available. A monitor was deployed in the lower reach but lost.

Brook trout fingerlings were stocked in August 2002. Electrofishing in August 2003 found only five yearling brook trout, but growth was excellent and these were in excellent condition. Brook trout yearlings were stocked in April 2004 and electrofishing in August 2004 found 21 trout all from the April stocking. However, none of these were from the 2002 year class. Electrofishing in October 2005 found 25 adult trout, all corresponding to the 2004 stocking. Sampling in the same areas in October 2006 found trout only in the area between the upper and middle temperature monitors. Two adults and five juvenile brook

trout were captured (Table 1). This is the first evidence of natural reproduction since stocking began in 2002. The two adults were yearlings stocked in 2004 (aged using scales). Sampling was difficult. Dense, overhanging reed canary grass may have lowered the catch along EF2 and deeper water was impounded by a field road crossing at the top of EF2. Other species captured included: creek chub, fathead minnow, central mudminnow, white sucker, common shiner, and blacknose dace.

Monitoring of Stony Creek should not continue during 2007 unless time permits. If time and resources were available, temperature monitors should be placed at the same locations, and electrofishing conducted in a similar manner to assess survival and natural reproduction. No further stocking is planned at the present time. If stream conditions improve in the future, restocking could be attempted. Water samples taken in 2005 showed high levels of phosphorus and suspended solids. Riparian buffers and other measures to decrease sediment and phosphorus loading should be encouraged, particularly in the upper stream reaches.

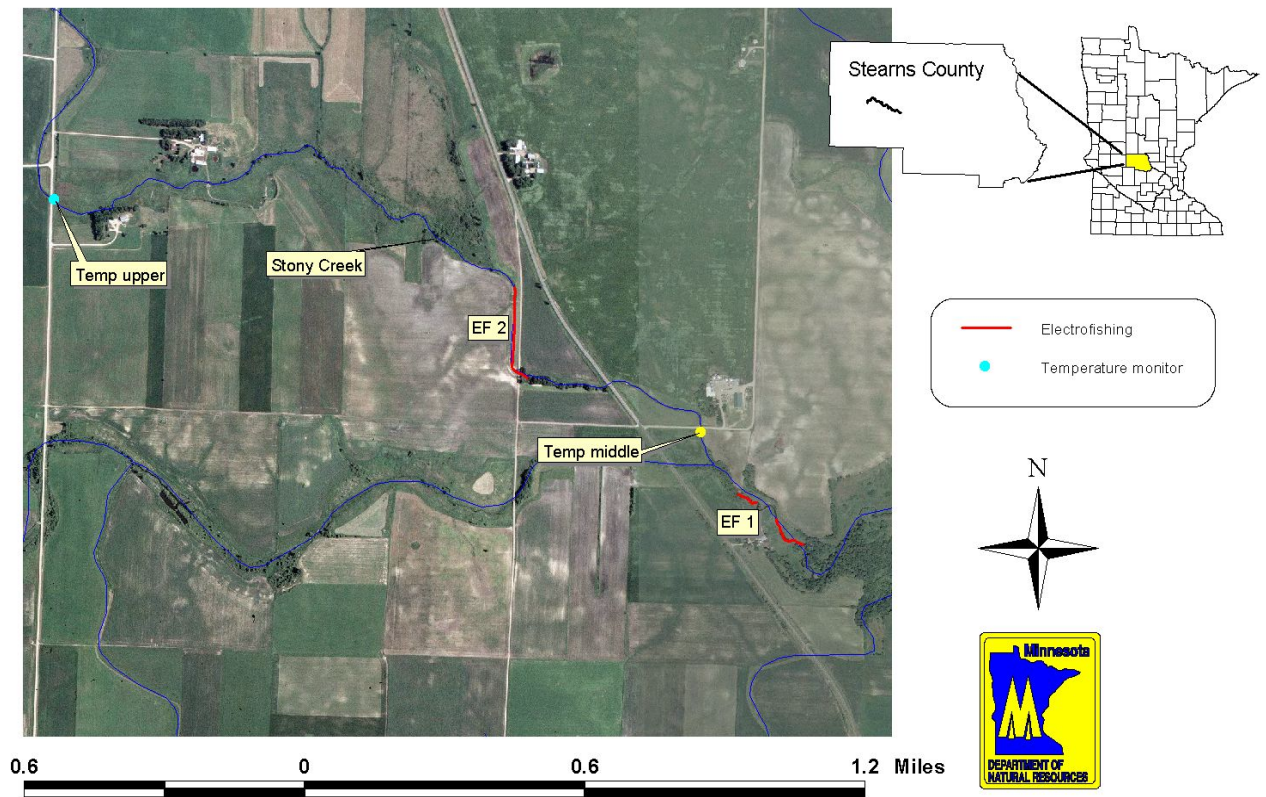


Figure 1. Sampling locations on Stony Creek, Spring Hill, MN 2006.

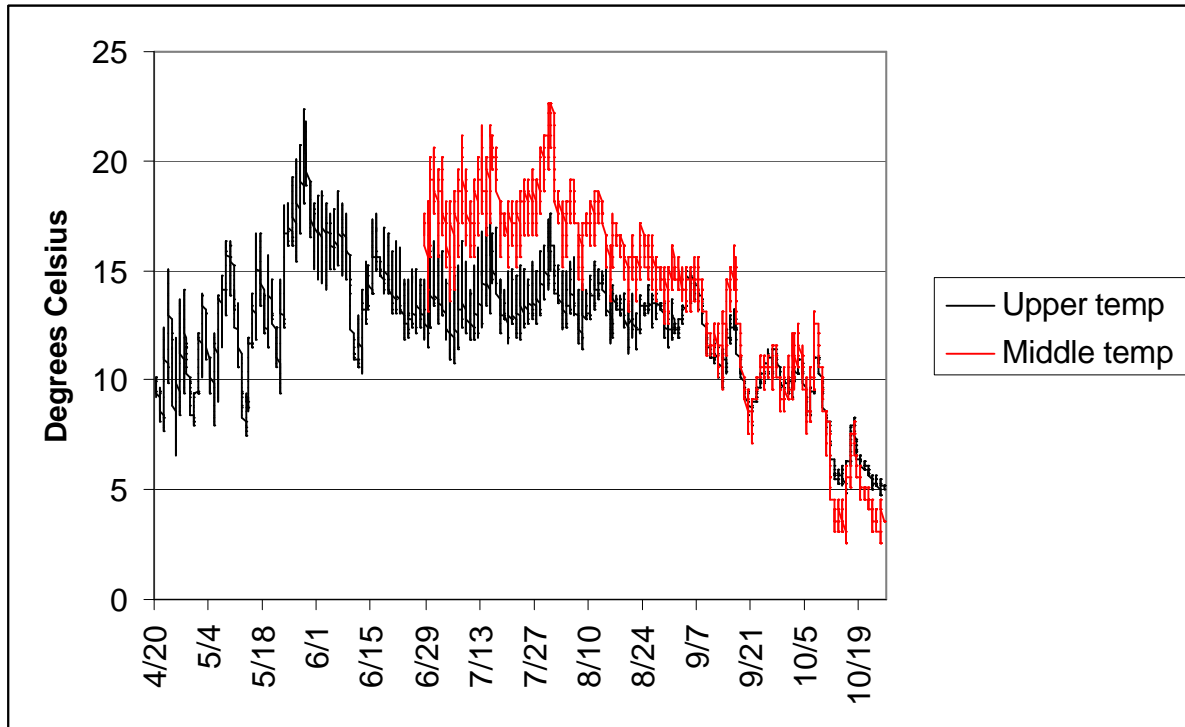


Figure 2. Hourly temperatures recorded at two locations on Stony Creek, 2006.

Table 1. Electrofishing station information for Stony Creek, MN, 10/25/2006.

Station	Effort (sec)	Length (m)	N-BKT	Length mm
EF1	423	221	0	—
EF2	1829	335	7	53, 153, 159, 173, 175, 335, 335

Gear: Smith-Root Model 15-D (backpack)

Crew: Mark Pelham, Joe Stewig.

Table 2. Temperatures recorded from two temperature loggers during summers 2001-2006.

	Upper Monitor				
	2001	2002	2003	2005	2006
N readings	4463	7324	4775	3372	4512
N > 18 °C	296	1689	377	177	111
N > 20 °C	34	706	128	28	34
N > 22 °C	0	194	3	0	4
N > 25 °C	0	0	0	0	0
Max	21.6	24.9	22	21.5	22.3
Overall Mean	13	17.2	12	14.2	13.7
Hrs consecutive > 20 °C	9	106	42	19	12

	Middle Monitor			
	2001	2002	2003	2006
N readings	2823	7290	4775	2854
N > 18 °C	1596	2204	860	523
N > 20 °C	1070	785	419	155
N > 22 °C	597	213	91	24
N > 25 °C	188	4	2	0
Max	29.7	25	25.2	22.6
Overall Mean	18.7	17.9	13.4	13.8
Hrs consecutive > 20 °C	159	67	15	46

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Author	Date
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Regional Fisheries Supervisor	Date
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