

SPRING CREEK

DAUPHIN COUNTY

**WATER QUALITY STANDARDS REVIEW
STREAM REDESIGNATION EVALUATION REPORT**

**Segment: Basin
Drainage List: O
Stream Code: 10124**

**WATER QUALITY MONITORING AND ASSESSMENT SECTION (ADK/RMR)
DIVISION OF WATER QUALITY ASSESSMENT AND STANDARDS
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MARCH 1998
REVISED JULY 2001**

SPRING CREEK, DAUPHIN COUNTY DRAINAGE LIST O

BACKGROUND

Spring Creek is a tributary to the Susquehanna River. This basin has a drainage area of approximately 11 square miles (Figure 1). Approximately 20% of this basin is owned by Dauphin County which maintains a public-use section flowing through a forested area buffered by a pedestrian and bicycle use only pathway. The remainder of the basin contains urban development and is heavily influenced by associated activities. The Department's South Central Regional Office requested redesignation of Spring Creek from Warm Water Fishes (WWF) to Cold Water Fishes (CWF).

Surveys conducted by the Pennsylvania Fish and Boat Commission (PFBC) and the Department's South Central Regional Office support the recommendation. The purpose of this survey was to document the existing aquatic life use of Spring Creek.

METHODS

Two sampling stations (Table 1) previously surveyed in July of 1996 by the PFBC were chosen by the Department for fish and macroinvertebrate assessment. On July 28, 1997, the Department surveyed station SC02 by electrofishing for 35 minutes a distance of 150 meters upstream from the Rt 444 bridge to a large pool. On July 29, 1997, the Department surveyed station SC03 by electrofishing upstream a distance of approximately 100 meters starting at 19th Street. These two locations are in addition to a third station (SC01) upstream of Interstate 83 which was surveyed in May of 1997 by the PFBC for fish assessment only. Approximately 100 meters of stream reach were evaluated at each location using a backpack electrofisher to determine fish species and densities. Fish were collected, counted, and identified while game fish were also measured for length. All fish were returned to Spring Creek following the recording of data.

Benthic macroinvertebrate populations were monitored using a D-frame Kick-net in riffle areas at each station. Samples were preserved in 95% ethanol, transported to the laboratory and identified to the lowest level (genus when possible).

FINDINGS

Thirteen taxa of benthic macroinvertebrates were identified at SC02, and fifteen taxa were identified at SC03 (Table 2). Both stations contained 1 mayfly taxon and 2 caddisfly taxa. Most taxa collected were fairly pollution-tolerant, indicating that stream quality may be influenced by urban runoff and substrate degradation from urban development.

DEP survey results documented nine species of fish at both stations surveyed in July of 1997 (Table 3). PFBC results indicated 6 and 7 species respectively at SC02 and SC03, and 10 species upstream at SC01. Blacknose dace were present at all stations and brown trout were collected from stations SC02 and SC03. The trout collected at station SC03 represented a naturally reproducing population.

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on April 22, 2000 (30 Pa.B 2071). A similar notice was also published in the Harrisburg Patriot-News on April 21, 2000. In addition, the City of Harrisburg, Paxtang Borough, Penbrook Borough, Swatara Township, and Lower Paxton Township were all notified of the evaluation in a letter dated April 19, 2000. The Cumberland-Dauphin-Perry Tri-County Planning Commission was also notified at the same time. The Dauphin County Conservation District provided water chemistry data taken July 13, 1999 at two stations on Spring Creek. No other data on water chemistry, instream habitat, or the aquatic community were received in response to these notifications.

A draft of this report was submitted to the above stakeholders, along with a request for comments, on September 20, 2002. No comments were received in response to this request.

AQUATIC LIFE USE QUALIFICATIONS

The biological data indicate that Spring Creek supports Cold Water Fishes (CWF) as defined at §93.3, but is negatively influenced from urban non-point source pollution as documented by data collected from the benthic macroinvertebrate community.

RECOMMENDATION

Based on applicable regulatory criteria, the Department recommends that Spring Creek basin be redesignated as Cold Water Fishes (CWF) based on the presence of naturally reproducing brown trout and the presence of blacknose dace. This redesignation affects approximately 15.7 stream miles, and provides a level of Chapter 93 protection consistent with Spring Creek's aquatic conditions.

Figure 1: Spring Creek Collection Stations

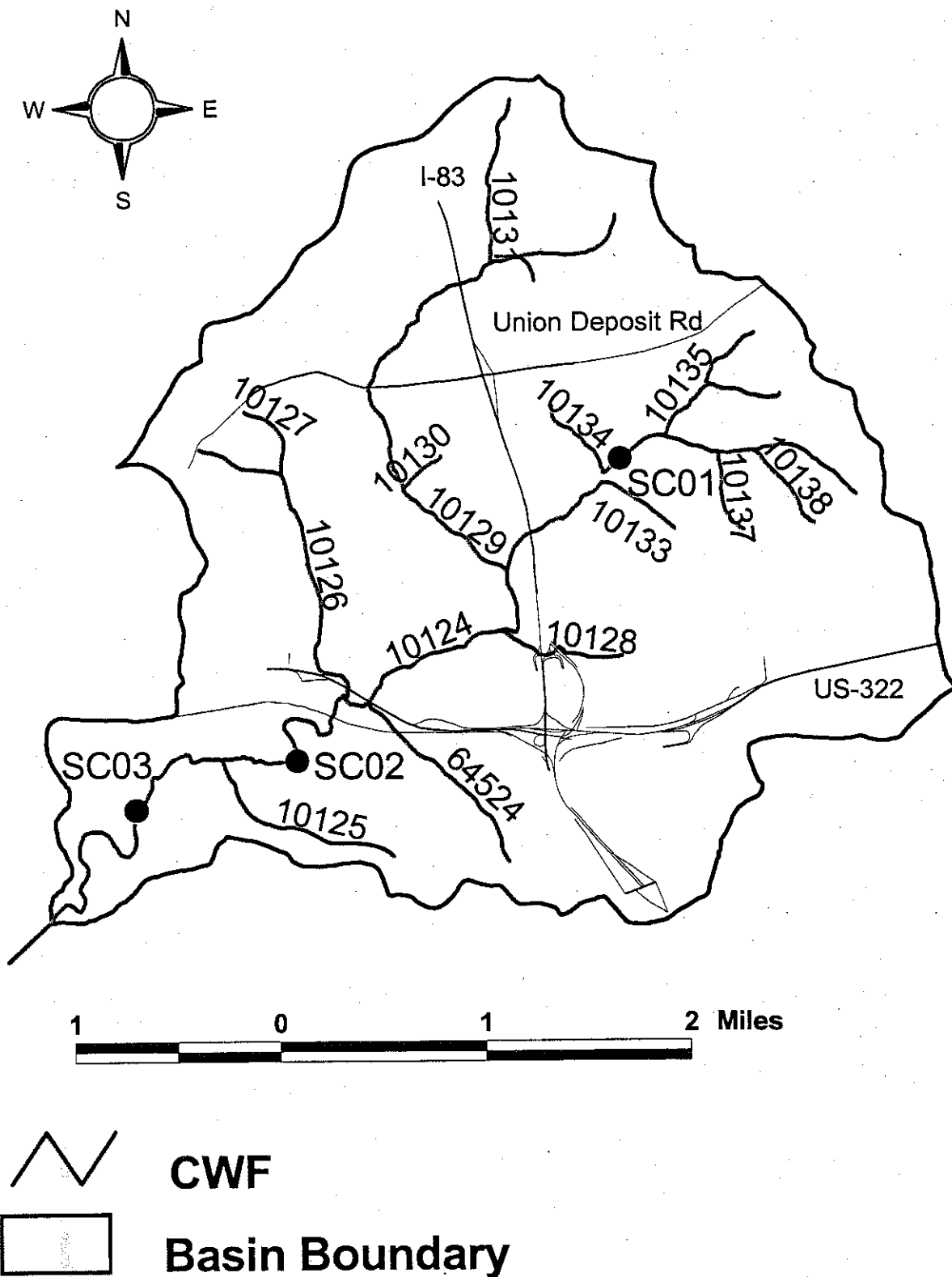


TABLE 1
SAMPLING STATION LOCATIONS
SPRING CREEK – DAUPHIN COUNTY

Fish and/or benthic macroinvertebrate collection stations on Spring Creek, Dauphin County, May 21, July 28 and July 29, 1997.

<u>STATION</u>	<u>LOCATION</u>
<u>SC01</u>	Spring Creek 0.6 kilometers upstream of East Park Drive bridge Latitude: 40 16 21 Longitude: 76 48 26
<u>SC02</u>	Spring Creek approximately 300 meters upstream of the Route 441 bridge crossing Latitude: 40 15 09 Longitude: 76 50 14
<u>SC03</u>	Spring Creek 2.1 kilometers upstream of confluence with Susquehanna River Latitude: 40 14 55 Longitude: 76 51 07

TABLE 2
BENTHIC MACROINVERTEBRATE DATA
SPRING CREEK – DAUPHIN COUNTY

Benthic macroinvertebrates collected at Stations SC02 (July 28, 1997) and SC03 (July 29, 1997) on Spring Creek, Dauphin County.

<u>TAXA</u>	SC02	SC03
TURBELLARIA (Flatworms)		A
DECOPODA (Crayfish)		
Cambaridae <i>Orconectes</i> sp.	R	R
AMPHIPODA (Freshwater shrimp)		
Gammaridae <i>Gammarus</i> sp.	VA	VA
ISOPODA (Aquatic sowbugs)		
Asellidae <i>Caecidotea</i> sp.	R	
EMPHEMEROPTERA (Mayflies)		
Baetidae <i>Baetis</i> sp.	R	R
TRICHOPTERA (Caddisflies)		
Hydropsychidae <i>Cheumatopsyche</i> sp.	C	P
Hydropsychidae <i>Hydropsyche</i> sp.	A	A
COLEOPTERA (Beetles)		
Elmidae <i>Optioservus</i> sp.	P	P
Elmidae <i>Stenelmis</i> sp.	A	VA
Psephenidae <i>Psephenus</i> sp.	R	P
ODONATA (Dragonflies/Damselflies)		
Gomphidae -	R	
DIPTERA (Flies)		
Chironomidae -	C	A
Empididae <i>Hemerodromia</i> sp.		P
Muscidae <i>Limnophora</i> sp.		R
Simuliidae <i>Simulium vittatum</i>		R
Tipulidae <i>Antocha</i> sp.	C	A
Tipulidae <i>Tipula</i> sp.	P	P
TOTAL TAXA	13	15

Relative Abundance: Rare (1-2) Present (3-9) Common (10-24) Abundant (25-100)
 Very Abundant (101+)

**TABLE 3
HISTORICAL FISH DATA
SPRING CREEK – DAUPHIN COUNTY**

Historical Fish Data at Stations SC01, SC02, and SC03 on Spring Creek, Dauphin County.

<u>SPECIES/SIZE CLASS</u>	SC01 (PFBC- 5/21/97)	SC02 (PFBC- 7/16/96)	SC02 (DEP- 7/28/97)	SC03 (PFBC- 7/16/96)	SC03 (DEP- 7/29/97)
Brown Trout					
75-99mm (3- 4 in)		8		28	5
100-124mm (4- 5 in)				4	10
250-274mm (10-11 in)		1			
275-299mm (11-12 in)			1	1	4
300-324mm (12-13 in)				1	
350-374mm (14-15 in)				1	
375-399mm (15-16 in)		1			
Total	0	10	1	35	19
Blacknose dace	X	X	X	X	X
Bluegill				X	X
Bluntnose minnow	X				
Central stoneroller	X		X		
Common shiner	X				
Creek chub	X	X	X	X	
Greenside darter					X
Green sunfish	X				
Largemouth bass					X
Longnose dace	X	X	X	X	X
Pumpkin sunfish			X		
Spotfin shiner	X	X	X	X	X
Tesselated darter	X		X		X
White sucker	X	X	X	X	X
Total Taxa	10	6	9	7	9

X- Fish species present