

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

**MILL CREEK  
BERKS COUNTY  
SEGMENT: BASIN  
STREAM CODE: 01936  
DRAINAGE LIST: F**

WATER QUALITY ASSESSMENT SECTION (DSB)  
DIVISION OF WATER QUALITY STANDARDS  
BUREAU OF WATER STANDARDS AND FACILITY REGULATION  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OCTOBER 2006

**EXECUTIVE SUMMARY REPORT  
MILL CREEK  
BERKS COUNTY  
DRAINAGE LIST F**

**BACKGROUND**

Mill Creek is a tributary to Tulpehocken Creek in the Schuylkill River watershed. This stream is located in Jefferson and Tulpehocken Townships, Berks County and has a drainage area of 12.0 square miles. Land use in this basin is mostly pastureland with smaller amounts of cropland and low-density residential. There are also a few small remnants of hardwood forest distributed throughout the basin. Because Mill Creek was inadvertently omitted from Chapter 93 of the Pennsylvania Code, it was evaluated to determine the correct aquatic life use designation. This evaluation was based on a field survey conducted on September 19, 2001.

**FINDINGS**

**AQUATIC BIOTA:** Fish were collected at 4 stations during the September 2001 survey (Figure 1 and Table 1). An assessment of the instream and riparian zone habitat parameters was also made (Table 2). Habitat scores ranged from 184 to 127. Station 1MC near the headwaters of Mill Creek had the highest score which falls in the lower end of the Optimal category. This station had a forested riparian zone that resulted in scores for epifaunal substrate, embeddedness, sediment deposition, and bank condition that were higher than the other stations. Scores of the remaining three stations fell in the lower end of the Suboptimal category. Station 3UNT was on a small tributary that drained an area of intense agriculture and had very low scores for all four of the parameters listed above.

A total of 7 species of fish were collected during this survey (Table 3). The fish community at Stations 1MC and 2UNT was dominated by creek chub and blacknose dace, species that are commonly found in cold water streams. White suckers, which tolerate a wide range of temperature regimes, were present at all stations. They were the only species collected at Station 3UNT because of the poor instream habitat. Station 4MC contained a mixture of cold-water and warm-water species. White suckers were abundant at this station while blacknose dace and tessellated darters were common. Small numbers of banded killifish and largemouth bass, both warm-water species, were also collected but these species may be transitory from the Tulpehocken Creek, which is approximately 0.6 stream miles downstream from this station.

**PUBLIC RESPONSE AND PARTICIPATION SUMMARY**

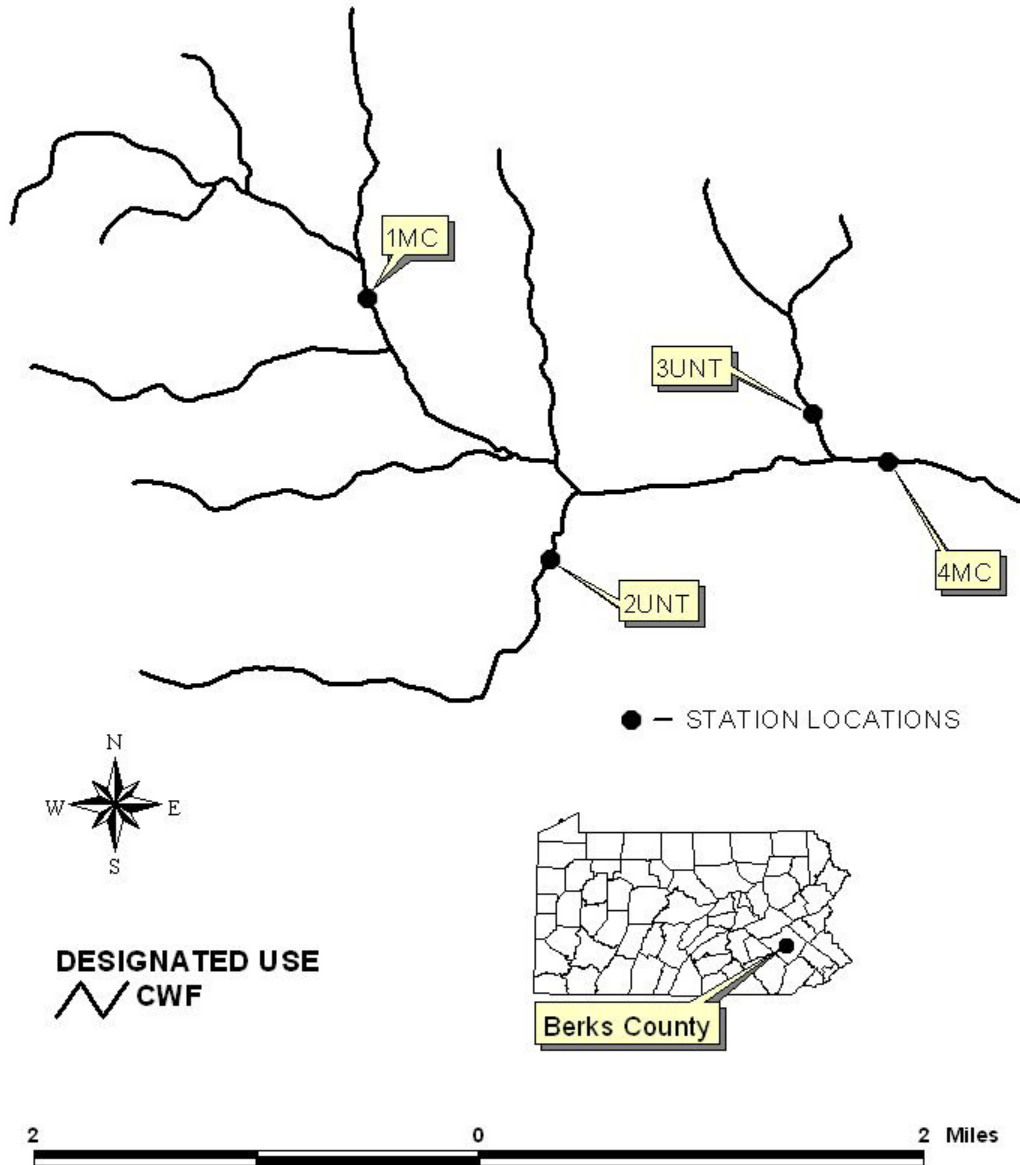
The Department provided public notice of this designation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on April 27, 2002 (32 Pa.B 2162). A similar notice was also published in the Reading Eagle-Times on April 26, 2002. In addition, Jefferson and Tulpehocken Townships were also notified of the evaluation in a letter dated March 12, 2002. The Berks County Planning Commission was also

notified at the same time. No data on water chemistry, instream habitat, or the aquatic community were received in response to these notifications.

## **RECOMMENDATIONS**

Based on applicable regulatory definitions, the Department recommends a designated use of Cold Water Fishes (CWF) for the Mill Creek basin. This recommendation is based on the propagation and/or maintenance of flora and fauna that are indigenous to a cold-water habitat (e.g. creek chub and blacknose dace). This recommendation affects approximately 20.6 stream miles.

FIGURE 1.  
MILL CREEK



**TABLE 1**  
**STATION LOCATIONS**  
**MILL CREEK**  
**BERKS COUNTY**

<b><u>STATION</u></b>	<b><u>LOCATION</u></b>
1MC	Mill Creek (01936) approximately 10 meters upstream from the T623 crossing. Tulpehocken Township, Berks County Lat: 40° 25' 54" Long: 76° 13' 21" RMI: 3.53
2UNT	Unnamed Tributary to Mill Creek (01939) approximately 30 meters upstream of the SR419 bridge Tulpehocken Township, Berks County Lat: 40° 24' 49" Long: 76° 12' 27" RMI: 0.37
3UNT	Unnamed Tributary to Mill Creek (01937) approximately 50 meters downstream of the T623 crossing. Jefferson Township, Berks County Lat: 40° 25' 23" Long: 76° 11' 05" RMI: 0.21
4MC	Mill Creek approximately 5 meters downstream of the T958 bridge. Jefferson Township, Berks County Lat: 40° 25' 12" Long: 76° 10' 44" RMI: 0.63

**TABLE 2  
HABITAT ASSESSMENT SUMMARY  
MILL CREEK, BERKS COUNTY  
SEPTEMBER 19, 2001**

HABITAT PARAMETER	STATIONS <sup>1</sup>			
	1MC	2UNT	3UNT	4MC
1. instream cover	16	14	12	14
2. epifaunal substrate	15	11	9	11
3. embeddedness	13	12	5	12
4. velocity/depth	15	9	8	15
5. channel alterations	17	15	16	17
6. sediment deposition	16	7	4	11
7. riffle frequency	14	13	12	12
8. channel flow status	15	15	10	10
9. bank condition	16	14	13	9
10. bank vegetation protection	17	15	12	11
11. grazing/disruptive pressures	16	11	14	12
12. riparian vegetation zone width	14	8	12	6
Total Score	184	144	127	140
Rating <sup>2</sup>	OPT	SUB	SUB	SUB

<sup>1</sup> Refer to Figure 1 and Table 1 for station locations.

<sup>2</sup> OPT = Optimal; SUB = Suboptimal

**TABLE 3  
FISHES  
MILL CREEK  
BERKS COUNTY  
SEPTEMBER 19, 2001**

**TABLE 3: FISH DATA**

SPECIES NAME	STATION			
	1MC	2UNT	3UNT	4MC
Blacknose dace, <i>Rhinichthys atratulus</i>	C	A		C
Longnose dace, <i>Rhinichthys cataractae</i>				P
Creek chub, <i>Semotilus atromaculatus</i>	C	C		R
White sucker, <i>Catostomus commersoni</i>	C		C	A
Banded killifish, <i>Fundulus diaphanus</i>				R
Largemouth bass, <i>Micropterus salmoides</i>		R		R
Tessellated darter, <i>Etheostoma olmstedi</i>	P	C		C

A = Abundant; C = Common; P = Present; R = Rare