

Distribution

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DEP Stream Code: 02299 PA FISH AND BOAT COMMISSION
COMMENTS AND RECOMMENDATIONS
February 16, 2012

UNT to Bear Creek

WATER: Unnamed Tributary to Bear Creek (603A) Schuylkill County
near Aucheys
LAT/LON: 403443/760935

EXAMINED: August 2001

BY: Miko, Chikotas, Scharle

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

CW Unit Leader Action: _____ Date: _____
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AREA COMMENTS:

The unnamed tributary to Bear Creek near Aucheys was surveyed to document the wild trout population and provide baseline information for the database. A Class A wild brook trout population was documented in the stream with a total biomass estimate of 51.66 kg/ha.

AREA RECOMMENDATIONS:

1. Manage the unnamed tributary to Bear Creek as a Class A wild brook trout water. Statewide regulations should apply with no stocking.
2. Add the unnamed tributary to Bear Creek to the Class A Wild Trout Waters List and the list of reproducing trout waters.
3. The Schuylkill County Conservation District should investigate the headwaters source(s) of sedimentation, thought to be agriculture or logging at the time of the survey, and take corrective action where possible.
4. South Manheim Township should consider immediately seeding rye grass in graded areas when roadside grading is necessary in the vicinity of this tributary. This will aid in minimizing erosion and sedimentation.

CWU COMMENTS:

During the 2001 survey the estimated abundance of legal size (≥ 7 inches) wild brook trout was 65/km. Based on a section length of 4.1 km (2.55 miles) this translated into an estimated total of 266 legal size wild brook trout ranging from seven to nine inches in length in the Unnamed Tributary to Bear Creek (403443/760935), Section 01.

CWU RECOMMENDATIONS:

1. The Unnamed Tributary to Bear Creek (603A), Section 01, should be managed as a Class A wild brook trout water. Statewide regulations should apply with no stocking.

2. Based on the presence of a Class A wild brook trout population, the DEP Chapter 93 Water Quality Standards should be upgraded to HQ-CWF. The special protected use classification should apply to the entire basin of the Unnamed Tributary to Bear Creek.

**Pennsylvania Fish & Boat Commission
Bureau of Fisheries
Fisheries Management Division**

Unnamed Tributary to Bear Creek (603A) near Aucheys
Fisheries Management Report

Prepared by
D. Miko and M. Kaufmann

Fisheries Management Database Name: UNT (WEST)
Lat/Lon: 403443/760935

Date Sampled: August 21 & 22, 2001 Date Prepared: March 2002

The unnamed tributary to Bear Creek near Aucheys is a 4.1 km (2.6 mi) long stream located in Schuylkill County. The stream flows through a mix of agricultural land and hemlock/hardwood forest. It is roughly paralleled by T-662 for approximately one-third of its length. The stream flows into Bear Creek at River Mile (RM) 5.35, 40°34'43" Latitude and 76°09'35" Longitude, and has a drainage area of 4.9 km² (1.9 mi²). The unnamed tributary to Bear Creek is located on the Friedensburg, PA United States Geological Survey 7.5 minute quadrangle. The stream is considered one section from the headwaters downstream to the mouth and is in 100% private ownership.

The unnamed tributary to Bear Creek was surveyed to document the presence or absence of a wild trout population. One representative station (0101) was sampled to characterize the stream. The 412 m long station averaged 3.2 m in width and comprised ten percent of the total stream length. Station 0101 was located 56 m upstream from a farm lane bridge at RM 0.70, 40°34'20" Latitude and 76°09'57" Longitude (Fig. 1).

Chemical-physical parameters and their associated values measured under low flow conditions were as follows: air temperature 20.0°C, water temperature 17.0°C, specific conductance 51 umhos, pH 6.9 standard units, total alkalinity 18 mg/l, total hardness 18 mg/l, and dissolved oxygen concentration 7.3 mg/l.

Riparian and instream habitats were described as follows: bank erosion was light and the stream substrate consisted primarily of rubble, gravel, and sand. Some boulders and silt were also present in the substrate mix. Agriculture and timbering in the headwaters was the probable source of the silt. The stream channel was braided at this station; however, under the low flow conditions all available water flowed through a single channel. The stream was characterized as being very shallow with the water often trickling

around the rocks. Short to long, shallow riffles separated short to medium length, 0.15 m - 0.40 m deep, pools. A culvert pipe created one 1.50 m deep pool. Habitat for adult trout was poor and restricted to the pools.

Aquatic macroinvertebrate diversity was fair with 18 taxa in the collection (Table 1). The collection included three mayfly families, three stonefly families, and three caddisfly families. No macroinvertebrate taxon was considered to be abundant at this station. Macroinvertebrate families considered very intolerant of pollution were collected at this station and included *Peltoperlidae* and *Pteronarcidae* (stoneflies) and *Glossosomatidae* (caddisfly). Aquatic macroinvertebrate familial diversity suggested that long-term water quality was good in this stream.

Brook trout *Salvelinus fontinalis* and Blacknose dace *Rhinichthys atratulus* were the only fish species collected. Five hundred ninety-five wild brook trout ranging in lengths from 25 mm to 249 mm total length (TL) were collected during the survey. Of the 595 trout collected during two electrofishing passes of the 412 m sampling station 23 (4%) were ≥ 175 mm TL and 1 (<1%) was ≥ 225 mm TL. A Petersen mark recapture population estimate was used to generate biomass estimates. The total brook trout biomass was 51.66 kg/ha and abundance was 2,007 brook trout/km (3,231 trout/mi) (Table 2). Three percent of the estimated brook trout population was comprised of legal length trout, while legal length trout comprised 27% of the estimated biomass. Reproduction was excellent as trout ≤ 99 mm TL comprised 29% of the total estimated biomass. The potential of this stream to support direct angling pressure was limited by the small stream size and lack of available adult trout habitat.

Management Recommendations

1. Manage the unnamed tributary to Bear Creek as a Class A wild brook trout water. Statewide regulations should apply with no stocking.
2. Add the unnamed tributary to Bear Creek to the Class A Wild Trout Waters List and the list of reproducing trout waters.
3. The Schuylkill County Conservation District should investigate the headwaters source(s) of sedimentation, thought to be agriculture or logging at the time of the survey, and take corrective action where possible.
4. South Manheim Township should consider immediately seeding rye grass in graded areas when roadside grading is necessary in the vicinity of this tributary. This will aid in minimizing erosion and sedimentation.

DEP Stream Code: 02299

UNT to Bear Creek

macroinvertebrate taxa collected from the unnamed tributary to Bear Creek (603A), river mile 0.70, Schuylkill County, August 21, 2001.

Taxon	Station 0101	PTI
Ephemeroptera		
Baetidae	X	7
Ephemeridae	X	4
Heptageniidae	X	4
Plecoptera		
Peltoperlidae	X	1
Perlidae	X	3
Pteronarcidae	X	0
Coleoptera		
Psephenidae	X	6
Trichoptera		
Glossosomatidae	X	0
Hydroptilidae	X	5
Limnephilidae	X	4
Odonata		
Aeshnidae	X	8
Gomphidae	X	4
Diptera		
Other Chironomids	X	0-10
Tabanidae	X	6
Tipulidae	X	4
Megaloptera		
Corydalidae	X	6
Hemiptera		
Gerridae	X	NA
Decapoda		
Cambaridae	X	6
Total taxa	18	

X = Present at Station; * = Abundant at Station. PTI = Pollution Tolerance Index. PTI ranges from 0 (very intolerant of pollution) to 10 (very tolerant of pollution). Na = not available.

Table 2. Wild brook trout abundance and biomass estimate for Station 0101 of the unnamed tributary to Bear Creek (603A), Schuylkill County, determined August, 2001.

Length group (mm)	Population estimate	Number/ha	Kg/ha	Number/km
25	36	273	0.3	87
50	587	4,454	13.35	1,425
75	51	387	1.52	124
100	44	334	4.7	107
125	69	524	13.58	167
150	13	99	4.25	32
175	17	129	7.59	41
200	9	68	5.46	22
225	1	8	0.91	2
Total	827	6,276	51.66	2,007

Table 3. Stream access defined as proximity of the unnamed tributary to Bear Creek (603A), Schuylkill County to a public road.

Road Accessibility	Percent
% within 100 m	56
% within 300 m	62
% within 500 m	68

Table 4. Summary and descriptive statistics for Station 0101 of the unnamed tributary to Bear Creek (603A), Schuylkill County, determined August 2001.

Species	Site RM	Site Length (m)	Site Width (m)	Site Area (h)	Total #	# Legal	# > 225mm
Brook Trout	0.70	412	3.2	0.13	595	23	1

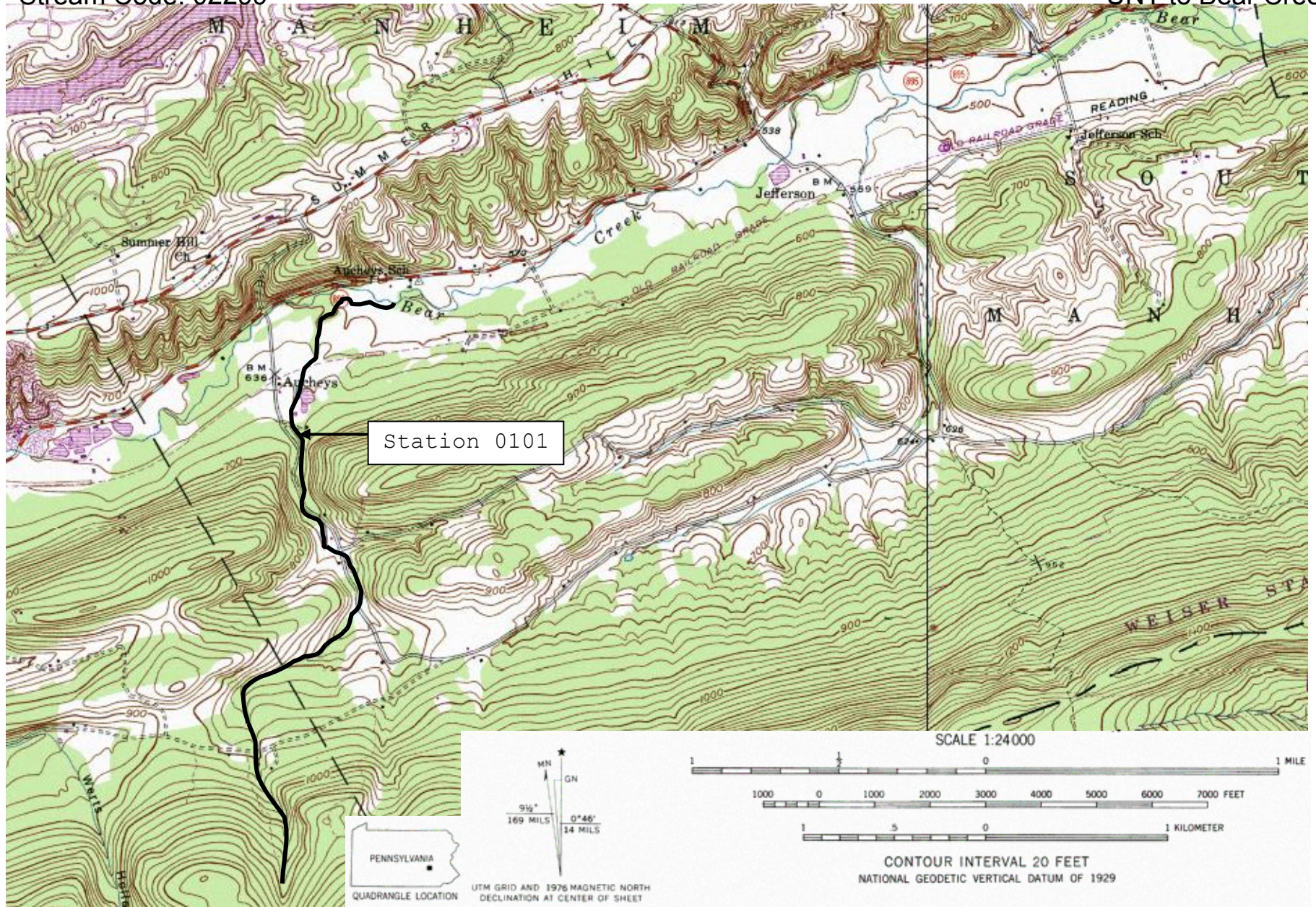


Figure 1. Location map for the unnamed tributary to Bear Creek (603A), Schuylkill County.