

## **Distribution**

Pennsylvania Department of Environmental Protection, Northwest Regional Office, Attention: Joe Brancato, 230 Chestnut Street, Meadville, PA 16335

[jbrancato@pa.gov](mailto:jbrancato@pa.gov)

PFBC Northcentral Regional Law Enforcement Office, Attention: WCO, Mader 1150 Spring Creek Road, Bellefonte, PA 16823,

[rmader@pa.gov](mailto:rmader@pa.gov)

PFBC Division of Fisheries Management, Attention: Brian Ensign, Fisheries Management Area 2

[bensign@pa.gov](mailto:bensign@pa.gov)

McKean County Conservation District, 17137 Route 6, Smethport, PA 16749. Heather McKean, and Jody Groshek.

[hsmckean@mckeancountypa.org](mailto:hsmckean@mckeancountypa.org)

[JdGroshek@mckeancountypa.org](mailto:JdGroshek@mckeancountypa.org)

**PA FISH AND BOAT COMMISSION  
COMMENTS AND RECOMMENDATIONS**

February 22, 2018

**WATER:** UNT to Blacksmith Run (RM 1.23) (16C) McKean County

**EXAMINED:** August 11 and September 01, 2015

**BY:** K. Anderson

Bureau Director Action: \_\_\_\_\_ Date: \_\_\_\_\_

Division Chief Action: \_\_\_\_\_ Date: \_\_\_\_\_

CW Unit Leader Action: \_\_\_\_\_ Date: \_\_\_\_\_

=====  
**DES COMMENTS:** UNT to Blacksmith Run (RM 1.23) is a small tributary to Blacksmith Run that flows through the private land in McKean County. The estimated biomass of wild Brook Trout was 37.58 kg/ha and met the minimum biomass criteria for listing as a Class A wild Brook Trout stream. Twelve percent of the stream length was sampled.

**MANAGEMENT RECOMMENDATIONS:**

1. UNT to Blacksmith Run (RM 1.23), Section 01, (from headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.
2. Manage UNT to Blacksmith Run (RM 1.23), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Add UNT to Blacksmith Run (RM 1.23) from headwaters downstream to the mouth to the PFBC's list of streams sections that support natural reproduction of trout.

**DES CHIEF COMMENTS:** Data support management recommendations. Concur with recommended actions.

**PENNSYLVANIA FISH & BOAT COMMISSION  
BUREAU OF FISHERIES  
DIVISION OF ENVIRONMENTAL SERVICES**

UNT to Blacksmith Run (RM 1.23) (16C)  
Section 01  
Environmental Report  
Unassessed Water

Prepared by  
Ken Anderson

Fisheries Management Database Name: UNT to Blacksmith Run (RM 1.23)  
Lat/Lon: 41°48'51"/78°28'18"

Date Sampled: Aug. 11 and Sept. 4, 2015 Date Prepared: Nov. 24, 2015

### **Introduction**

UNT to Blacksmith Run (RM 1.23) is a small stream located in McKean County and flows into Blacksmith Run at River Mile (RM) 1.23, 41°48'51" latitude and 78°28'18" longitude. The stream has a total length of 2.57 km (1.6 mi) and a drainage area of 5.80 km<sup>2</sup> (2.24 mi<sup>2</sup>). UNT to Blacksmith Run (RM 1.23) can be found on the Smethport, PA United States Geological Survey 7.5 minute quadrangle (Figure 1). All of the riparian lands are privately held. The current 25 PA Code Chapter 93 Water Quality Standards designated use for the stream is Cold Water Fishes (CWF).

The stream was surveyed as part of the Unassessed Waters Program to gather baseline information on the resource for management and protection purposes and to verify and document the presence of a reproducing population of trout.

### **Methods**

The examination of UNT to Blacksmith Run (RM 1.23) was conducted at site river mile 0.00 on August 11, 2015 and at site river mile 0.10 on September 01, 2015. Combined the two sampling stations total 12 percent of the stream length and were chosen to be representative of the Section 01. Procedures were carried out according to those outlined by Weber et al. (2011). Physical characteristics, water chemistry, and fish communities were examined. Rapid bioassessment protocols (RBP) were used to assess the habitat in this stream (Barbour et al. 1999). The fish communities were sampled using an Electrobackpack equipped with Smith-Root LR20 variable voltage electrofisher Pulsed-DC

(Battery Backpack). The electrofisher was set at 200 volts at Site 0.00 and 300 volts for Site 0.10. Wild trout were measured and recorded in 25 mm (1.0 in) length groups. Statewide average weights calculated for each length group were used to generate the biomass estimate. Wild trout densities were determined by using the number of trout collected in a single electrofishing pass. Scientific and common fish names reference Integrated Taxonomic Information System (<http://www.itis.gov>).

## **Results**

### ***Site River Mile: 0.00***

Sample site RM 0.00 was located at the unnamed tributary's mouth, 41°48'51" latitude and 78°28'18" longitude. The 100 m long station averaged 2.40 m in width and covered 4 percent of the section length (Table 1). This portion of the stream primarily flowed through a narrow riparian corridor between an active agricultural field and a rural residential yard. The survey reach was densely vegetated with shrubs primarily willows and alders. Bank erosion was light and the stream substrate consisted primarily of gravel. The reach contained several large woody debris jams providing cover in pools. The RBP analysis yielded a final score of 148 (Table 2). Water chemistry parameters and their associated values measured under low flow conditions were as follows: water temperature 18.1°C, air temperature 21°C, specific conductance 55 umhos, pH 6.78 standard units, total alkalinity 20 mg/l, and total hardness 20 mg/l (Table 3).

### **Brook Trout**

A total of 28 wild Brook Trout ranging from 25 mm to 274 mm in total length (TL) were captured during the survey with four (14 percent) being greater than or equal to the legal harvestable length (175 mm: 7 in). Brook Trout biomass was estimated to be 34.05 kg/ha. Brook Trout abundance was estimated at 280 trout/km (450 trout/mi) with 40 trout/km (64 trout/mi) being of legal length or longer (Table 5).

### ***Site River Mile: 0.10***

Sample site RM 0.10 was located immediately up-stream of the above noted site, 41°48'56" latitude and 78°28'19" longitude. The 200 m long station averaged 2.05 m in width and covered 8 percent of the section length (Table 1). This portion of the stream flowed through a reach containing both the condition previously described above for first half the surveyed length, as well as, fenced actively grazed cattle pasture for the

remaining reach surveyed. Bank erosion was moderate with short reaches of concrete rip-rap rubble placed as bank protection and the stream substrate consisted of gravel bed. Water chemistry parameters and their associated values measured under low flow conditions were as follows: water temperature 19.2°C, specific conductance 67 umhos, pH 6.50 standard units, (Table 3).

### **Brook Trout**

A total of 86 wild Brook Trout ranging from 25 mm to 274 mm in total length (TL) were captured during the survey with 10 (12 percent) being greater than or equal to the legal harvestable length (175 mm: 7 in). Brook Trout biomass was estimated to be 41.12 kg/ha. Brook Trout abundance was estimated at 430 trout/km (692 trout/mi) with 50 trout/km (80 trout/mi) being of legal length or longer (Table 6).

### **Electrofishing Summary**

Ten fish species were captured from the two sites, including wild Brook Trout at each site (Table 4). The other species captured were Central Stoneroller (*Campostoma anomalum*), Creek Chub (*Semotilus atromaculatus*), Fantail Darter (*Etheostoma flabellare*), Lamprey species (*Petromyzontidae*), Mottled Sculpin (*Cottus bairdii*), Rainbow Darter (*Etheostoma caeruleum*), Redside Dace (*Clinostomus elongates*), Western Blacknose Dace (*Rhinichthys obtusus*) and White Sucker (*Catostomus commersonii*).

A total of 114 wild Brook Trout ranging from 25 mm to 274 mm in total length (TL) were captured during the two surveys. Mean catch between the two sites was 59 Brook Trout with eight (14 percent) being greater than or equal to the legal harvestable length (175 mm: 7 in). Mean Brook Trout biomass was 37.58 kg/ha. Mean Brook Trout abundance was 358 trout/km (576 trout/mi) with 46 trout/km (74 trout/mi) being of legal length or longer (Table 7).

### **Discussion**

Section 01 of UNT to Blacksmith Run (RM 1.23) supported natural reproduction of Brook Trout and qualified for listing on the PFBC's list of stream sections that support natural reproduction of trout as outlined in 58 PA Code §57.11. Additionally, the Brook Trout biomass determined from the surveys met the Pennsylvania Fish and Boat Commission's minimum biomass criteria for a Class A population, as outlined in 58 PA Code §57.8a., Class A Wild Trout Streams.

The current 25 PA Code Chapter 93 Water Quality Standards listing of Cold Water Fishes (CWF) for the UNT to Blacksmith Run

(RM 1.23) basin does not adequately protect the existing flora and fauna present within the basin. Due to the significant wild trout resource, which met Class A criteria, UNT to Blacksmith Run (RM 1.23) should be upgraded to the High Quality-Cold Water Fishes and Migratory Fishes (HQ-CWF, MF) designation by the PA Department of Environmental Protection (DEP) upon listing by the Commission as a Class A wild trout stream.

### **Management Recommendations**

1. Add UNT to Blacksmith Run (RM 1.23), Section 01, (from headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.
2. Manage UNT to Blacksmith Run (RM 1.23), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Add UNT to Blacksmith Run (RM 1.23) from headwaters downstream to the mouth to the PFBC's list of streams sections that support natural reproduction of trout.
4. Request the Department of Environmental Protection designate UNT to Blacksmith Run (RM 1.23) as High Quality-Cold Water Fishes (HQ-CWF) under 25 PA Code Chapter 93 based on the Class A qualifier found in 93.4b(2)(ii).

### **Literature Cited**

- Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid bioassessment protocols for use in wadeable streams and Rivers. USEPA. Report 814-99-002 Washington, DC.
- Weber, R., R. T. Greene, and D. Miko. 2011 Protocols for conducting biological assessments of unassessed trout waters. Pages 95-101 in D. Miko, editor. Sampling protocols for Pennsylvania's wadeable streams. Pennsylvania Fish and Boat Commission. Harrisburg, PA

Table 1. UNT to Blacksmith Run (RM 1.23) (16C), McKean County. Site sampling location, length surveyed, average site width and site area.

Site Date	Rivermile	Downstream limit description	Length (m)	Average Site Width (m)	Area (ha)
08/11/15	0.00	Mouth	100	2.40	0.02
09/01/15	0.10	100 meters upstream of mouth	200	2.05	0.04

Table 2. High Gradient Rapid Bioassessment Protocol ratings UNT to Blacksmith Run (RM 1.23) (16C), McKean County conducted at RM 0.00 on Aug 11, 2015.

Habitat Parameter Reported	Score
1. Epifaunal Substrate / Available Cover:	16
2. Embeddedness:	14
3. Velocity / Depth Regime:	16
4. Sediment Deposition:	12
5. Channel Flow Status:	15
6. Channel Alteration:	17
7. Frequency of Riffles (or bends):	18
8. (LB) Left Bank Stability (LB):	8
(RB) Right Bank Stability (RB):	8
9. (LB) Left Bank Vegetative Protection:	8
(RB) Right Bank Vegetative Protection:	8
10. (LB) Left Bank Riparian Vegetative Width:	4
(RB) Right Bank Riparian Vegetative Width:	4
Note: Canopy near and wood jams in pools provided quality cover, yard west, cornfield east.	Total Score: 148

Table 3. Chemistries collected in the UNT to Blacksmith Run (RM 1.23) (16C), McKean County at sample site(s) within Section 1 in 2015.

Parameter	RM 0.00	RM 0.10
Sample Date	08/11/2015	09/01/2015
Time (24 hour)	9:30	10.00
Water Temperature (C)	18.10	19.20
pH Field Electrometric (SU)	6.78	6.50
Specific Conductance (umhos)	55	67
Total Alkalinity Field Mixed Indicator (mg/l)	20	
Total Hardness Field EDTA (mg/l)	20	

Table 4. Fish species occurrence in the UNT to Blacksmith Run (RM 1.23) (16C), McKean County at sample site(s) within Section 1 in 2015.

Common Name	Scientific Name	Coarse Abundance	
		RM 0.00	RM 0.10
Mottled Sculpin	<i>Cottus bairdii</i>	Abundant	Abundant
Western Blacknose Dace	<i>Rhinichthys obtusus</i>	Common	Abundant
Brook Trout	<i>Salvelinus fontinalis</i>	Common	Abundant
Creek Chub	<i>Semotilus atromaculatus</i>	Present	Common
Fantail Darter	<i>Etheostoma flabellare</i>	Present	Present
White Sucker	<i>Catostomus commersonii</i>	Present	Present
Lamprey species	<i>Petromyzontidae</i>	Rare	Present
Central Stoneroller	<i>Campostoma anomalum</i>	Rare	
Redside Dace	<i>Clinostomus elongatus</i>		Present
Rainbow Darter	<i>Etheostoma caeruleum</i>		Rare

Table 5. Electrofishing catch and biomass statistics for Brook Trout from UNT to Blacksmith Run (RM 1.23) (16C). Site located at River Mile 0.00 with a site Lat/Lon of 41.814130, 78.471540. Survey date: 8/11/2015.

Site Area (Ha): 0.0240                      Site Length (m): 100

Length Group (mm)	Catch	Estimated Kg/Ha	Estimated Number/Ha	Estimated Number/Km
25	3	0.13	125	30
50	7	0.72	292	70
75	3	0.74	125	30
100	4	2.28	167	40
125	3	3.06	125	30
150	4	6.85	167	40
175	2	5.32	83	20
250	2	14.95	83	20
Totals	28	34.05	1,167	280



Table 6. Electrofishing catch and biomass statistics for Brook Trout from UNT to Blacksmith Run (RM 1.23) (16C). Site located at River Mile 0.10 with a site Lat/Lon of 41.815571, 78.471841. Survey date: 9/1/2015.

Site Area (Ha): 0.0410

Site Length (m): 200

Length Group (mm)	Catch	Estimated Kg/Ha	Estimated Number/Ha	Estimated Number/Km
50	37	2.22	902	185
75	23	3.34	561	115
125	7	4.17	171	35
150	9	9.02	220	45
175	6	9.35	146	30
200	1	2.26	24	5
225	2	6.38	49	10
250	1	4.38	24	5
Totals	86	41.12	2,097	430

Table 7. Mean wild Brook Trout catch and biomass estimate in the UNT to Blacksmith Run (RM 1.23) (16C), McKean County collected from sample site RM 0.00 and 0.10 in 2015.

Length group (mm)	Catch	Estimated kg/ha	Estimated Number/ha	Estimated Number/km
25	2	0.06	63	15
50	22	1.47	597	128
75	13	2.04	343	73
100	2	1.14	83	20
125	5	3.61	148	33
150	7	7.93	193	43
175	4	7.34	115	25
200	1	1.13	12	3
225	1	3.19	24	5
250	2	9.67	54	13
Totals	59	37.58	1,632	358

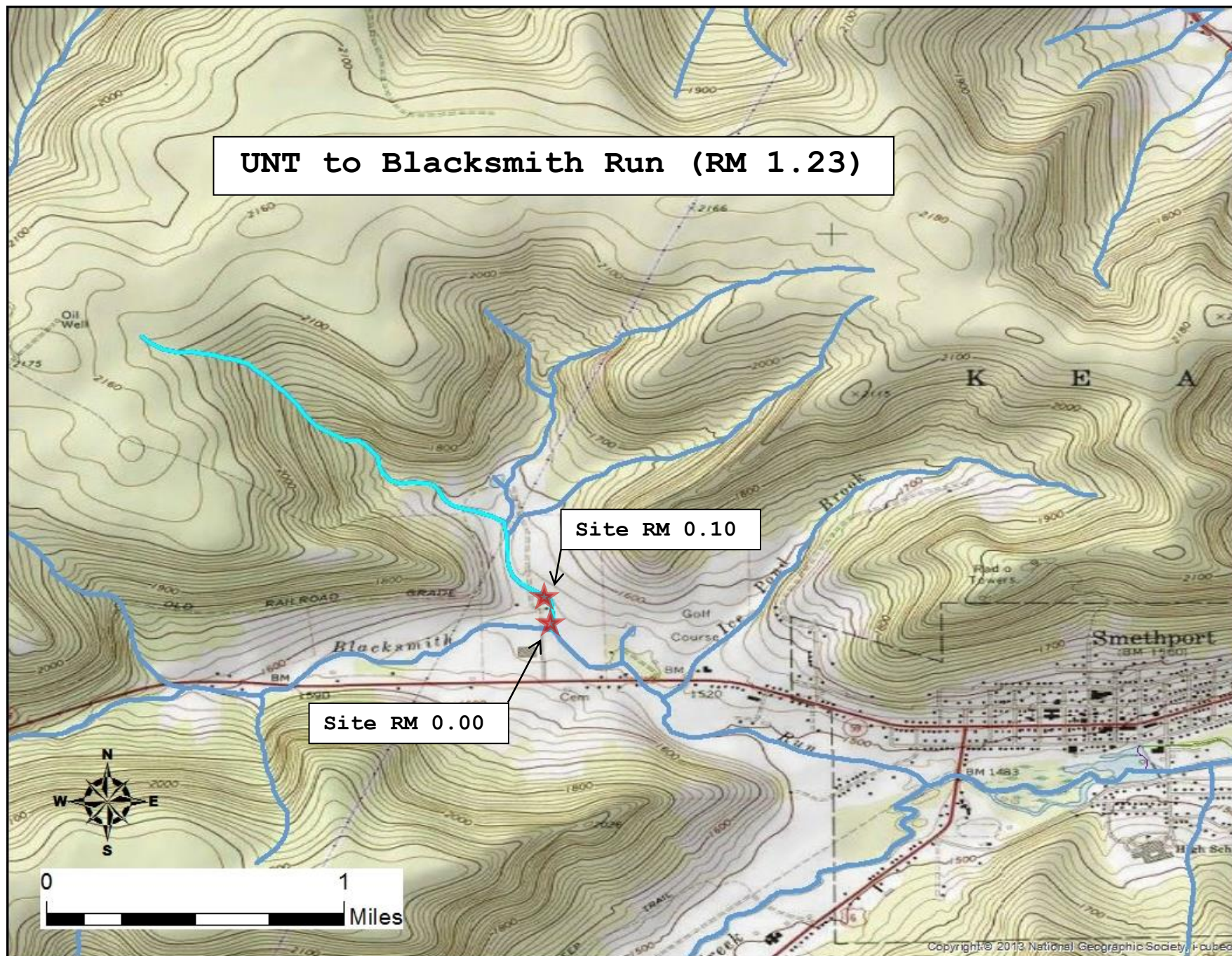


Figure 1. Location map for sample sites on UNT to Blacksmith Run (RM 1.23) (16C), McKean County.