

Distribution

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

February 22, 2018

WATER: Rauchtown Creek (310A), Section 02 Clinton County

EXAMINED: June 30, 2010 and July 6, 2011

BY: Fisheries Management Area 3

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

CW Unit Leader Action: _____ Date: _____

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AREA COMMENTS:

Rauchtown Creek can be characterized as a small, high gradient, mountain stream. Section 02 was examined during 2010 and 2011 to evaluate its potential for management as a Class A wild trout stream. A fine wild brown and brook trout population was found during both years that exceeded the minimum criteria for Class A listing. The estimated number of legal-size wild trout was one to two times higher than the number of adult hatchery trout currently allocated to the section. The 2010 and 2011 surveys further validate the excellent wild trout populations in this stream.

AREA RECOMMENDATIONS:

1. Add Rauchtown Creek, Section 02, to the Commission's Class A Wild Trout Waters Program.
2. Remove Rauchtown Creek, Section 02, from the Approved Trout Waters Program for 2012 season.
3. Manage Rauchtown Creek, Section 02, as a Class A wild trout stream under Commonwealth Inland Waters regulations with no stocking of hatchery trout.
4. Continue to monitor the wild brook and brown trout population in Section 02 following cessation of stocking as a treatment stream as part of the Class A/B study outlined in the Strategic Plan for Management of Trout Fisheries in Pennsylvania 2010-2014.

This work made possible by funding from the Sport Fish Restoration Act Project F-57-R Fisheries Management.

**PENNSYLVANIA FISH & BOAT COMMISSION
BUREAU OF FISHERIES
FISHERIES MANAGEMENT DIVISION**

Rauchtown Creek (310A)
Section 02
Fisheries Management Report

Prepared by
David Kristine and Jason Detar

Fisheries Management Database Name: Rauchtown Creek
Lat/Lon: 41°08'09"/77°13'37"

Date Sampled: 6/30/10, 7/6/11 Date Prepared: January 20, 2012

Introduction

Rauchtown Creek is a 7.0-km (4.4 mi) long, third order, coldwater stream originating in Crawford Township, Clinton County that flows northwest and enters a sink hole near the village of Rauchtown. Section 02 is 2.9-km (1.8 mi) long and extends from the SR 0880 Bridge 100 m upstream of Gotshall Run downstream to the Groupe Road (SR 2010) Bridge (Figure 1). The PFBC has stocked adult trout in Section 02 for many years despite it harboring a very good wild trout population. Section 02 is highly accessible and the majority of this reach flows through public land adjoined by Ravensburg State Park. Fisheries management of Section 02 has been the subject of several Pennsylvania Fish and Boat Commission (PFBC) studies and additional information concerning these studies and the physical, social, and biological attributes of the fishery for this and other management sections of Rauchtown Creek can be found in Hollender et al. (1976), Hollender and Wilberding (1983), and Greene and Weber (1992, 1995, and 1996).

Rauchtown Creek, Section 02 was surveyed in 2010 and 2011 to re-evaluate a historically high biomass wild trout population for Class A status. Section 02 is currently included in a study to evaluate wild trout populations during and after stocking as part of the Strategic Plan for Management of Trout Fisheries in Pennsylvania 2010-2014 (PFBC 2009).

Methods

The examination of Rauchtown Creek, Section 02 was conducted on June 30, 2010 and July 6, 2011. Fish sampling procedures were carried out according to those outlined by Detar et al. (2011). Two representative sampling stations totaling 21 percent of the section length were sampled. The sampling site at river mile (RM) 2.09 is an historical site which has been examined annually for

various studies from 1991-2002 while site RM 1.27 was added in 2010 to better represent the lower reaches of Section 02 which had previously thought to have been not well represented.

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 a electrobackpack equipped with a generator powered Coffelt-type variable voltage electrofisher set at 150 volts alternating current (AC). 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 were given an identifying upper caudal fin clip during the initial electrofishing pass to facilitate a mark-recapture population estimate with trout densities determined by using the Chapman modification of the Petersen estimator or M+C-R when R was less than three. Scientific and common fish names reference Integrated Taxonomic Information System (<http://www.itis.gov>).

Results

Site RM: 2.09

Historical sample site RM 2.09 is located 250 m downstream of the lower bridge in Ravensburg State Park 41°06'39" latitude and 77°14'34" longitude. This 310-m long site had an average wetted mean width of 5.2 m in 2010 and 5.1 m in 2011 (Table 1). The biomass estimates for wild brook trout were 15.48 kg/ha and 15.09 kg/ha in 2010 and 2011, respectively (Table 2), while biomass estimates for wild brown trout were 44.03 kg/ha and 53.29 kg/ha in 2010 and 2011, respectively (Table 3). Estimated abundance of brook trout greater than or equal to legal length (175 mm, 7 in) was 36/km in 2010 and 35/km in 2011 while estimates of legal size brown trout were 87/km in 2010 and 242/km in 2011 (Tables 4 and 5).

Site RM: 1.27

Sample site RM 1.27 is located approximately 285 m upstream of SR 2010 (Knarrrs Road) bridge 41°07'15" latitude and 77°14'09". Site length was 302 m in 2010 and 320 m in 2011, while average wetted width was 6.9 m in 2010 and 5.1 m in 2011 (Table 1). The biomass estimates for wild brook trout were 6.18 kg/ha and 12.58 kg/ha in 2010 and 2011, respectively while biomass estimates for wild brown trout were 57.00 kg/ha and 62.95 kg/ha in 2010 and 2011, respectively (Tables 6 and 7). Estimated abundance of brook trout greater than or equal to legal length (175 mm, 7 in) was 20/km in 2010 and 50/km in 2011 while estimates of legal size brown trout were 142/km and 243/km in 2010 and 2011, respectively (Tables 6 and 7).

Section Average

The average wild trout (brook and brown trout combined) biomass estimates for the two sampling stations at RM 2.09 and 1.27 was

61.35 kg/ha in 2010 and 71.96 kg/ha in 2011 (Table 8). Expanding average estimates of abundance (number/km) of legal size wild brook and brown trout (175 mm, 7 in) to the total length of the section (2.9 km) yields estimated numbers of legal trout in Section 02 at 415 in 2010 and 829 in 2011 (Table 9).

Discussion

The average estimated wild brown trout density for Rauchtown Creek (10A), Section 02 determined from 2010 and 2011 surveys of 50.52 kg/ha and 58.12 kg/ha, respectively has exceeded the Pennsylvania Fish and Boat Commission's minimum biomass criteria of 40 kg/ha for a Class A wild brown trout population as outlined in 58 PA Code §57.8a. Class A Wild Trout Streams (Table 8). In addition, average total biomass of wild brown trout less than 150 mm (6 in) was at least 0.10 kg/ha and wild brown trout biomass comprised at least 75% of the total wild trout biomass (Tables 3, 7, and 8). Historical sampling at site RM 2.09 for the years 1997 through 2002 resulted in a combined average estimated wild trout density that exceeded criteria for Class A mixed brook and brown trout. Rauchtown Creek continues to support an excellent wild trout population and Section 02 should be added to the Commission's Class A Wild Trout Water program. Future management of Section 02 should also include no stocking of hatchery trout according to present PFBC policy for Class A wild trout streams.

Contemporary surveys of Section 02 have demonstrated that Rauchtown Creek is capable of harboring, at minimum, one to two times the number of legal size wild trout than are currently stocked and more than sufficient to provide outstanding fishing opportunities (Table 9). Cessation of stocking may have the potential to further improve the biomass of wild trout in Section 02 and is consistent with the strategies outlined in the Strategic Plan for Management of Trout Fisheries in Pennsylvania 2010-2014 (PFBC 2009).

Management Recommendations

1. Add Rauchtown Creek, Section 02, to the Commission's Class A Wild Trout Waters Program.
2. Remove Rauchtown Creek, Section 02, from the Approved Trout Waters Program for 2012 season.
3. Manage Rauchtown Creek, Section 02, as a Class A wild trout stream under Commonwealth Inland Waters regulations with no stocking of hatchery trout.
4. Continue to monitor the wild brook and brown trout population in Section 02 following cessation of stocking as a treatment stream as part of the Class A/B study outlined in the Strategic Plan for Management of Trout Fisheries in Pennsylvania 2010-2014.

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.
- Detar, J., R. Wnuk, R.T. Greene, M. Kaufmann. 2011 Standard electrofishing protocols for sampling Pennsylvania wadeable streams. Pages 5-24 in D. Miko, editor. Sampling protocols for Pennsylvania's wadeable streams. Pennsylvania Fish and Boat Commission. Harrisburg, PA.
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Table 1. Date surveyed, site length, and mean site wetted width for the historical sampling location at RM 2.09 and newly established site RM 1.27 in Section 02 on Rauchtown Creek (310A), Clinton County.

Site Date	RM = 2.09		RM = 1.27	
	Length (m)	Mean Width (m)	Length (m)	Mean Width (m)
10/16/1991	308	5.8	-	-
10/6/1992	308	5.6	-	-
10/14/1993	300	5.4	-	-
10/4/1994	300	6.6	-	-
9/29/1995	300	4.2	-	-
10/11/1996	323	6.5	-	-
10/1/1997	323	7.0	-	-
9/30/1998	300	4.8	-	-
9/28/1999	300	5.8	-	-
10/3/2000	308	5.2	-	-
10/11/2001	308	5.2	-	-
10/15/2002	308	5.2	-	-
6/30/2010	302	5.2	302	6.9
7/6/2011	310	5.1	320	5.1

Table 2. Estimated biomass (kg/ha) of wild brook trout for historical sample site located at RM 2.09 on Rauchtown Creek (310A), Clinton County, for 1991-2002, 2010, and 2011. Legal size is \geq 175 mm, 7 in.

Length Group (mm)	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2010	2011
50	0.89	0.01	0.17	0.10	0.59		1.17	1.31	0.25	0.17	1.09	1.05	0.23	0.05
75	0.67	1.46	0.64	0.23	1.84	0.43	2.94	1.04	1.29	3.15	3.14	1.44	0.08	0.04
100	1.52	1.48	0.69	0.64	0.60	1.89	0.24	2.53	1.84	1.03	0.26	4.28	0.87	0.69
125	4.76	3.03	4.26	2.65	2.29	2.80	0.29	7.33	5.35	4.16	4.57	10.05	4.82	6.48
150	1.75	2.09	2.38	2.02	5.48	5.87	4.20	3.70	3.38	3.45	4.87	6.88	4.45	3.38
175	1.77	5.50	1.46	1.74	3.62	1.62	5.66	2.40	2.55	7.53	5.59	8.84	3.26	4.45
200	0.53	4.67	0.59	0.96		0.48	1.54	3.28	2.61	1.29	1.73	3.22	1.77	
225							1.08					0.81		
Total	11.89	18.24	10.19	8.34	14.42	13.09	17.12	21.59	17.27	20.78	21.25	36.57	15.48	15.09
Legal	2.30	10.17	2.05	2.70	3.62	2.10	8.28	5.68	5.16	8.82	7.32	12.87	5.03	4.45

Table 3. Estimated biomass (kg/ha) of wild brown trout for historical sample site located at RM 2.09 on Rauchtown Creek (310A), Clinton County, for 1991-2002, 2010, and 2011. Legal size is \geq 175 mm, 7 in.

Length Group (mm)	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2010	2011
50	0.09	0.08	0.04		0.38		0.81	0.17	0.17	0.04	0.45	0.02	0.16	0.02
75	1.65	0.53	0.69	0.28	2.06	0.26	3.18	1.22	0.32	0.56	2.03	0.35	0.08	
100			0.39		0.11	0.67	0.15	1.56	0.19	0.22	0.09	0.32	0.46	0.18
125	0.94	1.98	2.85	0.39	0.42	0.76	0.27	5.96	1.72	2.02	1.81	3.32	7.37	2.66
150	4.19	1.83	1.42	0.46	2.22	4.80	1.58	10.29	4.14	3.09	2.46	8.19	14.80	1.66
175	3.31	1.04	3.33	3.23	2.94	1.55	3.56	3.39	8.45	3.50	2.94	5.02	2.57	16.57
200	3.16	3.90	5.33	3.80	6.29	0.46	6.50	5.44	6.28	7.35	4.24	8.04	6.80	11.05
225	5.10	3.83	2.13	4.24	11.98	4.43	2.85	5.10	3.45	3.90	1.68	8.05	2.58	6.82
250	5.68	1.28	1.17	5.05	8.06	4.34	4.80	7.08	3.22	2.48	5.69	3.48	2.32	8.07
275	1.31		1.60		7.52	1.19	2.05	1.60	1.36	4.43	1.48	1.49	3.02	
300	1.70	1.76		1.53	2.41	1.45	4.31	3.85		1.90	1.90	1.77	3.87	3.84
325		2.46							2.60			2.77		2.42
350			3.11											
Total	27.13	18.69	22.06	18.98	44.39	19.91	30.06	45.66	31.90	29.49	24.77	42.82	44.03	53.29
Legal	20.26	14.27	16.67	17.85	39.20	13.42	24.07	26.46	25.36	23.56	17.93	30.62	21.16	48.77

Table 4. Estimated abundance (Num/km) of wild brook trout for historical sample site located at RM 2.09 on Rauchtown Creek (310A), Clinton County, for 1991-2002, 2010, and 2011. Legal size is \geq 175 mm, 7 in.

Length Group (mm)	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2010	2011
50	172	3	47	17	123		272	157	143	29	231	136	50	10
75	55	273	87	30	193	40	412	100	187	234	273	149	7	3
100	52	55	27	30	17	102	19	87	107	36	10	159	33	26
125	110	58	100	70	40	65	6	147	163	94	97	227	103	135
150	26	26	23	33	50	87	77	43	47	39	62	94	56	42
175	13	42	10	17	20	15	62	17	20	55	45	78	26	35
200	3	23	3	7		3	12	13	17	6	10	19	10	
225							6					3		
Total	431	480	297	204	443	312	866	564	684	493	728	865	285	251
Legal	16	65	13	24	20	18	80	30	37	61	55	100	36	35

Table 5. Estimated abundance (Num/km) of wild brown trout for historical sample site located at RM 2.09 on Rauchtown Creek (310A), Clinton County, for 1991-2002, 2010, and 2011. Legal size is \geq 175 mm, 7 in.

Length Group (mm)	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2010	2011
50	26	23	10		80		285	20	50	10	94	3	33	3
75	136	75	93	13	173	28	446	83	47	49	166	13	7	
100			10		3	31	9	47	10	6	3	6	17	6
125	23	36	47	10	7	15	6	110	43	39	36	62	146	52
150	55	23	17	7	23	65	22	130	60	36	29	104	175	19
175	26	6	23	27	17	15	40	27	70	26	23	39	20	126
200	16	23	30	27	27	3	46	27	40	36	23	45	36	58
225	23	13	10	20	33	19	12	17	13	13	6	32	10	26
250	16	3	3	17	17	15	19	17	10	6	16	10	7	23
275	3		3		13	3	6	3	3	10	3	3	7	
300	3	3		3	3	3	9	10		3	3	3	7	6
325		3							3			3		3
350			3											
Total	327	208	249	124	396	197	900	491	349	234	402	323	465	322
Legal	87	51	72	94	110	58	132	101	139	94	74	135	87	242

Table 6. Estimated abundance and biomass of wild brook trout for sample site located at RM 1.27 on Rauchtown Creek (310A), Clinton County, in 2010 and 2011.

Length Group (mm)	Abundance (#/ha)		Biomass (kg/ha)		Abundance (#/km)	
	2010	2011	2010	2011	2010	2011
50	24	12	0.06	0.03	17	6
75	24	74	0.14	0.44	17	38
100	14		0.20		10	
125	29	110	0.70	2.69	20	56
150	72	37	2.96	1.51	50	19
175	19	49	1.23	3.14	13	25
200	10	43	0.89	3.97	7	22
225		6		0.80		3
Totals	192	331	6.18	12.58	134	169
Legal	29	98	2.12	7.91	20	50

Table 7. Estimated abundance and biomass of wild brown trout for sample site located at RM 1.27 on Raughtown Creek (310A), Clinton County, in 2010 and 2011.

Length Group (mm)	Abundance (#/ha)		Biomass (kg/ha)		Abundance (#/km)	
	2010	2011	2010	2011	2010	2011
50	91		0.23		63	
75	5		0.03		3	
100	82		1.17		56	
125	341	153	8.96	4.03	235	78
150	278	135	12.20	5.91	192	69
175	34	190	2.26	12.76	23	97
200	38	165	3.73	16.06	26	84
225	43	49	5.82	6.61	30	25
250	24	43	4.38	7.82	17	22
275	38	18	9.09	4.35	26	9
300	24	6	7.29	1.86	17	3
325	5		1.84		3	
375		6		3.55		3
Total	1003	765	57.00	62.95	691	390
Legal	206	477	34.41	53.01	142	243

Table 8. Estimated total biomass (kg/ha) of wild trout (brook, brown, and combined) for sample sites at RM 2.09 and 1.27 in Section 02, Rauchtown Creek (310A) during 1991-2002, 2010, and 2011. Percent contribution of total wild trout biomass for each species in ().

Site RM	Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2010	2011
2.09	Brook	11.89 (30)	18.24 (49)	10.19 (32)	8.34 (31)	14.42 (25)	13.09 (40)	17.12 (36)	21.59 (32)	17.27 (35)	20.78 (41)	21.25 (46)	36.57 (46)	15.48 (26)	15.09 (22)
	Brown	27.13 (70)	18.69 (51)	22.06 (68)	18.98 (69)	44.39 (75)	19.91 (60)	30.06 (64)	45.66 (68)	31.9 (65)	29.49 (59)	24.77 (54)	42.82 (54)	44.03 (74)	53.29 (78)
	Total	39.02	36.93	32.25	27.32	58.81	33.00	47.18	67.25	49.17	50.27	46.02	79.39	59.51	68.38
1.27	Brook	-	-	-	-	-	-	-	-	-	-	-	-	6.18 (10)	12.58 (17)
	Brown	-	-	-	-	-	-	-	-	-	-	-	-	57.00 (90)	62.95 (83)
	Total	-	-	-	-	-	-	-	-	-	-	-	-	63.18	75.53
Section Average	Brook	11.89 (30)	18.24 (49)	10.19 (32)	8.34 (31)	14.42 (25)	13.09 (40)	17.12 (36)	21.59 (32)	17.27 (35)	20.78 (41)	21.25 (46)	36.57 (46)	10.83 (18)	13.84 (19)
	Brown	27.13 (70)	18.69 (51)	22.06 (68)	18.98 (69)	44.39 (75)	19.91 (60)	30.06 (64)	45.66 (68)	31.9 (65)	29.49 (59)	24.77 (54)	42.82 (54)	50.52 (82)	58.12 (81)
	Total	39.02	36.93	32.25	27.32	58.81	33.00	47.18	67.25	49.17	50.27	46.02	79.39	61.35	71.96

Table 9. Estimated total abundance (#/km) of legal size (≥ 175 mm, 7 in) wild brook and brown trout combined for historical sample sites at river mile RM 2.09 and 1.27 in Section 02, Rauchtown Creek (310A) during 1991-2002, 2010, and 2011.

Site RM	Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2010	2011
2.09	Brook	16	65	13	24	20	18	80	30	37	61	55	100	36	35
	Brown	87	51	72	94	110	58	132	101	139	94	74	135	87	242
	Total	103	116	85	118	130	76	212	131	176	155	129	235	123	277
1.27	Brook	-	-	-	-	-	-	-	-	-	-	-	-	20	50
	Brown	-	-	-	-	-	-	-	-	-	-	-	-	142	243
	Total	-	-	-	-	-	-	-	-	-	-	-	-	162	293
Section	Brook	16	65	13	24	20	18	74	30	37	61	55	97	28	43
Average	Brown	87	51	72	94	110	58	132	101	139	94	74	135	115	243
	Total	103	116	85	118	130	76	212	131	176	155	129	235	143	286
Section Total		299	336	247	342	377	220	615	380	510	450	374	682	415	829
Adult Stocked															
Trout Allocation		1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	900	NA*	300	300

* Not stocked in 2002 due to decline in statewide adult trout production, stocking reinstated in 2003 and continued until 2011 at 300 trout annually. Section Total = #trout/km multiplied by Section length (2.9 km).

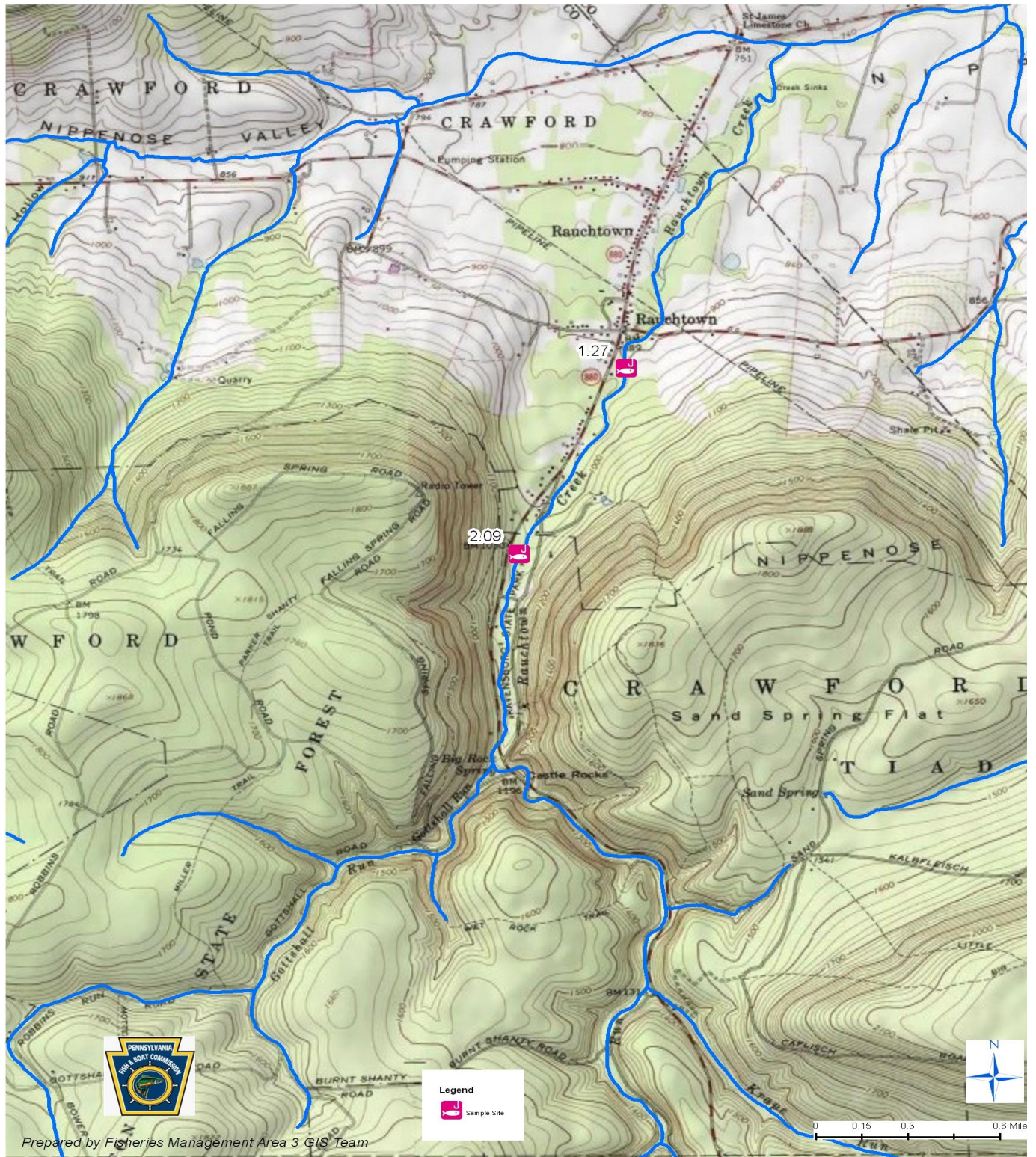


Figure 1. Location map for the two sample sites on Rauchtown Creek (310A), Section 02, Clinton County.