

## **Distribution**

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PA FISH AND BOAT COMMISSION  
COMMENTS AND RECOMMENDATIONS

February 22, 2018~~August 4, 2015~~~~June 24, 2015~~

**WATER:** Peet Brook (216C) Potter County

**EXAMINED:** June 22, 2010 & June 16, 2014

**BY:** Allen Woomer, Tim Wilson, Freeman Johns, Brian Ensign, Matthew Gordon, Jennifer Murray and Nick Yaroszewski

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

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

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**AREA COMMENTS:**

An initial survey was conducted on Peet Brook in 2010 to verify and document the occurrence of a naturally reproducing wild trout population within the stream. Wild Brown and Brook Trout were sampled at this site with an estimated total biomass of 176.68 kg/ha. Wild Brown Trout composed 156.82 kg/ha of this total amount. Because the site length in 2010 was less than 10% of the stream length, additional sampling was conducted to confirm that a Class A Brown Trout population is present in Peet Brook in June 2014. This survey yielded a wild Brown Trout biomass of 175.64 kg/ha confirming that a Class A wild Brown Trout population was present in Peet Brook. Ten percent of the stream was sampled in 2014.

**AREA RECOMMENDATION:**

1. Peet Brook was added to the list of stream sections that support natural reproduction of trout in 2010.
2. Add Peet Brook (16C), Section 01, to the Class A Wild Trout Streams list.
3. Peet Brook (16C), Section 01, should be managed as a Class A wild Brown Trout water under Commonwealth Inland Waters regulations with no stocking.
4. Upgrade the 25 PA Code Chapter 93 Water Quality Standards for Peet Brook from Cold Water Fishes to High Quality - Cold Water Fishes based on the presence of a Class A wild Brown Trout population documented in this stream.
5. Work with Potter County Conservation District and local watershed groups to maintain and improve the quality of the habitat in Peet Brook.

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**

Peet Brook (216C)  
Section 01  
Fisheries Management Report

Prepared by  
Allen Woomer

Fisheries Management Database Name: Peet Brook  
Lat/Lon: 41°50'02"/77°56'32"

Date Sampled: 06/22/2010 & 06/16/2014

Date Prepared: 2014

### **Introduction**

Peet Brook is a small stream located in Potter County. It has a total length of 7.7 km (4.78 mi), a drainage area of 14.48 km<sup>2</sup> (5.59 mi<sup>2</sup>) and flows into the Allegheny River at River Mile (RM) 317.74, 41°50'02" latitude and 77°56'32" longitude. This stream can be found on the Sweden Valley, PA and Ellisburg PA-NY, United States Geological Survey 7.5 minute quadrangles (Figure 1).

Peet Brook was initially inventoried in 2010 by Pennsylvania Fish and Boat Commission Fisheries Management staff to gather baseline information on the resource for management purposes and to verify and document the presence of a naturally reproducing population of trout. Knowledge of wild trout in streams is important in the permitting of land use activities and in long term restoration projects like the Eastern Brook Trout Joint Venture. Peet Brook is managed as a single section from the headwaters to the mouth and is 100% privately owned and open to fishing. The 2010 survey found a Class A wild Brown Trout *Salmo trutta* population in Peet Brook, however, in order to sample at least 10% of Peet Brook, the stream was resurveyed in 2014 to confirm that a Class A wild Brown Trout population was present based on this additional criteria. Results from both the 2010 and 2014 surveys will be reported in this narrative.

### **Methods**

The initial examination of Peet Brook was conducted on June 22, 2010. One representative sampling station totaling four percent of the section length was sampled in Section 01. On June 16, 2014, a second survey was conducted at the same site location in order to include 10% of the stream length in the sample and confirm that a

Class A wild Brown Trout population was present in Peet Brook. All procedures were carried out according to those outlined by Detar et al. (2011).

Physical characteristics, physical-chemical values, 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 gas powered electrobackpack equipped with a Coffelt Model BP-1C variable voltage electrofisher set at 150 volts AC-Alternating Current. Wild trout were measured and recorded in 25 mm (1.0 inch) length groups. Statewide average weights calculated for each length group were used to generate the biomass estimate. In 2010, wild trout were given an identifying upper caudal fin clip during the initial electrofishing pass to facilitate a mark-recapture population estimate. Trout densities were determined using the Chapman modification of the Petersen estimator or M+C-R when R was less than three. Scientific and common fish names reference the Integrated Taxonomic Information System (<http://www.itis.gov>). During the resurvey in 2014, a single pass electrofishing run was conducted on 10% of Peet Brook. Because the 2014 biomass estimate obtained in the first pass exceeded the minimum criteria for a Class A wild Brown Trout population (> 40 kg/ha), it was deemed unnecessary to conduct a recapture run.

## **Results**

### *Site River Mile: 0.13 (2010 survey)*

Sampling site RM 0.13 was located 30 m downstream of the SR 0049 Bridge at Colesburg, 41°50'07" latitude and 77°56'32" longitude (Figure 1). In 2010 the 305 m long station averaged 3.7 m in width (Table 1) and comprised four percent of the total section length. This portion of the stream primarily flowed through a variety of vegetation including mature and young trees, overhanging willow shrubs and hawthorns that provided dense shade to the stream. Bank erosion was minimal and some sediment deposition was noted. Substantial channel alteration was present only at the SR 0049 bridge crossing. The stream substrate consisted primarily of rubble, gravel, sand, and silt. Agricultural fields are relatively close to the stream on the right descending bank, but there is a well vegetated riparian buffer along much of the site of varying width up to about 30 m. The RBP analysis yielded a final score of 186 out of 200 in 2010 indicating overall excellent physical habitat (Table 2).

Physical-chemical parameters and their associated values measured in 2010 under normal flow conditions were as follows: air temperature 18°C, water temperature 9.5°C, specific conductance 85 umhos, pH 7.0 standard units, total alkalinity 18 mg/l, and total hardness 26 mg/l (Table 3).

Six fish species were captured at the site, including the wild Brook Trout *Salvelinus fontinalis* and Brown Trout. The other fish species sampled included Mottled Sculpin *Cottus bairdii*, White Sucker *Catostomus commersonii*, Creek Chub *Semotilus atromaculatus* and Blacknose Dace *Rhinichthys atratulus* (Table 4). Subjective abundance indices were not conducted during the 2010 survey. All fish species sampled were indicative of a coldwater environment.

### **Brown Trout**

Three hundred and five wild Brown Trout ranging from 25 to 399 mm in total length (TL) were captured during the survey. Sixty-nine (23 percent) were greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brown Trout biomass was estimated to be 156.82 kg/ha. Brown Trout abundance was estimated at 1,182 trout/km (1,902 trout/mi) with 250 trout/km (402 trout/mi) being of legal length or longer (Table 5).

### **Brook Trout**

Fifty-four wild Brook Trout ranging from 50 to 249 mm in total length (TL) were captured during the survey. Nine (17 percent) were greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brook Trout biomass was estimated to be 19.86 kg/ha. Brook Trout abundance was estimated at 197 trout/km (317 trout/mi) with 33 trout/km (53 trout/mi) being of legal length or longer (Table 6).

### **Site River Mile: 0.13 surveyed in 2014**

The 2010 site location was repeated in 2014, however, the site length was extended for a total of 770 m in order to comprise 10 percent of the total section length (Table 1). The RBP analysis yielded a final score of 163 out of 200 in 2014 indicating optimal physical habitat (Table 2).

Physical-chemical parameters and their associated values measured under normal flow conditions were as follows: air temperature 23°C, water temperature 11.9°C, specific conductance 110 umhos, pH 7.0 standard units, total alkalinity 21 mg/l, and total hardness 36 mg/l (Table 3). The 2014 results were similar to those obtained in 2010 except that specific conductance, total alkalinity and total hardness were somewhat higher and may have been due to slightly lower stream flow.

Six fish species were captured at the site, including wild Brown and Brook Trout. Other fish species sampled included Mottled Sculpin, considered abundant based on subjective abundance indices conducted in the first 300 m of the sample site, White Sucker, considered present and Pumpkinseed *Lepomis gibbosus* and American Brook Lamprey *Lampetra appendix* considered rare (Table 4). All fish species sampled except Pumpkinseed were indicative of a coldwater

environment. Pumpkinseed most likely migrated into the stream from a pond in the drainage.

### **Brown Trout**

Eight hundred and thirty-nine wild Brown Trout ranging from 25 to 549 mm in total length (TL) were captured during the survey. Two hundred and fifty-eight (31 percent) were greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brown Trout biomass was estimated to be 175.64 kg/ha. Brown Trout abundance was estimated at 1,089 trout/km (1,752 trout/mi) with 335 trout/km (539 trout/mi) being of legal length or longer (Table 7).

### **Brook Trout**

Twenty-seven wild Brook Trout ranging from 25 to 249 mm in total length (TL) were captured during the survey. Nine (33 percent) were greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brook Trout biomass was estimated to be 4.18 kg/ha. Brook Trout abundance was estimated at 34 trout/km (55 trout/mi) with 11 trout/km (18 trout/mi) being of legal length or longer (Table 8).

## **Discussion**

Based on information collected from both the 2010 and 2014 surveys, Section 01 of Peet Brook supported natural reproduction of Brook and Brown Trout. Both surveys verified that the wild Brown Trout biomass 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.

Peet Brook supported an outstanding wild Brown Trout population with consistent natural reproduction and very good abundance of legal size trout. Brook Trout abundance appeared somewhat lower in 2014 but the 2010 abundance may have been elevated by an excellent number of yearlings captured during that survey. The wild trout population in Peet Brook appears to benefit from an excellent stream flow that is concentrated in a narrow stream channel and maintains optimum cold water temperatures throughout summer.

While physical habitat is mostly very good in this stream, some sediment deposition and stream embeddedness was noted during the 2014 survey that may negatively affect the trout fishery over time. Ways to minimize sediment input from neighboring agricultural fields and other land use activities in the drainage should be devised to protect this outstanding wild trout resource.

The current 25 PA Code Chapter 93 Water Quality Standards listing of Cold Water Fishes (CWF) for the Peet Brook basin should be upgraded to High Quality - Cold Water Fishes based on the presence of a Class A wild Brown Trout population in this stream.

### **Management Recommendations**

1. Peet Brook was added to the list of stream sections that support natural reproduction of trout in 2010.
2. Add Peet Brook (16C), Section 01, to the Class A Wild Trout Streams list.
3. Peet Brook (16C), Section 01, should be managed as a Class A wild Brown Trout water under Commonwealth Inland Waters regulations with no stocking.
4. Upgrade the 25 PA Code Chapter 93 Water Quality Standards for Peet Brook from Cold Water Fishes to High Quality - Cold Water Fishes based on the presence of a Class A wild Brown Trout population documented in this stream.
5. Work with Potter County Conservation District and local watershed groups to maintain and improve the quality of the habitat in Peet Brook.

### **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 841-99-002 Washington, DC.
- Detar, J., R. Wnuk, R.T. Greene, and 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.



Table 1. Peet Brook (16C), Potter County. Site date, sampling location, length surveyed, site width and site area.

Site Date	Rivermile	Downstream limit description	Length (m)	Ave. Width (m)	Site Area (ha)
6/22/2010	0.13	30 m downstream SR 0049 bridge at Colesburg	305	3.7	0.11
6/16/2014	0.13	30 m downstream SR 0049 bridge at Colesburg	770	3.31	0.25

Table 2. High Gradient Rapid Bioassessment Protocol ratings for Peet Brook (16C), Potter County, conducted at RM 0.13 on June 22, 2010 and June 16, 2014.

Habitat Parameter	2010 Score	2014 Score
Epifaunal Substrate / Available Cover	19	16
Embeddedness	19	14
Velocity / Depth Regime	19	18
Sediment Deposition	19	12
Channel Flow Status	19	16
Channel Alteration	19	15
Frequency of Riffles or bends	19	18
Left Bank Stability	9	9
Right Bank Stability	9	9
Left Bank Vegetative Protection	9	10
Right Bank Vegetative Protection	9	10
Left Bank Riparian Vegetative Width	9	8
Right Bank Riparian Vegetative Width	8	8
<b>Total Score</b>	<b>186</b>	<b>163</b>

Table 3. Chemistries collected in Peet Brook (16C), Potter County. Sample site(s) are within Section 01.

Parameter	06/22/2010	06/16/2014
Site RM	0.13	0.13
Time (24 hour)	845	1100
Air Temperature (C)	18.0	23.0
pH Field Colorimetric (SU)	7.0	7.0
Specific Conductance (UMHOS)	85	110
Total Alkalinity Field Mixed Indicator (MG/L)	18	21
Total Hardness Field EDTA (MG/L)	26	36
Water Temperature (C)	9.5	11.9

Table 4. Fish species occurrence from Peet Brook (16C), Potter County, at sample site RM 0.13.

Common Name	Scientific Name	06/22/2010	06/16/2014
American Brook Lamprey	<i>Lampetra appendix</i>		Rare
Blacknose Dace	<i>Rhinichthys atratulus</i>	X	
Brook Trout	<i>Salvelinus fontinalis</i>	X	X
Brown Trout	<i>Salmo trutta</i>	X	X
Creek Chub	<i>Semotilus atromaculatus</i>	X	
Mottled Sculpin	<i>Cottus bairdii</i>	X	Abundant
Pumpkinseed	<i>Lepomis gibbosus</i>		Rare
White Sucker	<i>Catostomus commersonii</i>	X	Present

Table 5. Wild Brown Trout Petersen abundance and biomass estimates at sample site RM 0.13 on Peet Brook (16C), Potter County, on June 22, 2010.

Size Group	Estimate	low95CI	High95CI	Num/ha	kg/ha	Num/km
25	32			283	0.30	105
50	13			115	0.29	43
75	2			18	0.11	7
100	76	47	130	673	9.65	249
125	111	83	152	983	25.83	364
150	50	32	82	443	19.43	164
175	20	11	37	177	11.90	66
200	19	12	32	168	16.34	62
225	13	7	27	115	15.54	43
250	8	4	17	71	12.92	26
275	8	4	17	71	16.77	26
300	4	2	10	35	10.75	13
325	2			18	6.76	7
375	2			18	10.23	7
Totals	360			3,188	156.82	1,182

Table 6. Wild Brook Trout Petersen abundance and biomass estimates at sample site RM 0.13 on Peet Brook (16C), Potter County, on June 22, 2010.

Size Group	Estimate	low95CI	High95CI	Num/ha	kg/ha	Num/km
50	9			80	0.20	30
75	1			9	0.05	3
100	1			9	0.12	3
125	18	10	37	159	3.90	59
150	21	11	44	186	7.64	69
175	5	2	13	44	2.83	16
200	2			18	1.64	7
225	3			27	3.48	10
Totals	60			532	19.86	197

Table 7. Wild Brown Trout abundance and biomass estimates at sample site RM 0.13 on Peet Brook (16C), Potter County, on June 16, 2014.

Size Group	Catch	Num/ha	kg/ha	Num/km
25	150	588	0.62	195
75	10	39	0.25	13
100	177	694	9.96	230
125	199	781	20.51	258
150	45	177	7.74	58
175	106	416	27.94	138
200	58	228	22.09	75
225	33	129	17.47	43
250	27	106	19.31	35
275	17	67	15.79	22
300	9	35	10.71	12
350	6	24	11.13	8
475	1	4	4.76	1
525	1	4	7.36	1
Totals	839	3,292	175.64	1,089

Table 8. Wild Brook Trout abundance and biomass estimates at sample site RM 0.13 on Peet Brook (16C), Potter County, on June 16, 2014.

Size Group	Catch	Num/a	kg/ha	Num/km
25	2	8	0.01	3
50	4	16	0.04	5
100	3	12	0.16	4
125	5	20	0.48	6
150	4	16	0.64	5
175	5	20	1.25	6
200	3	12	1.09	4
225	1	4	0.51	1
Totals	27	108	4.18	34

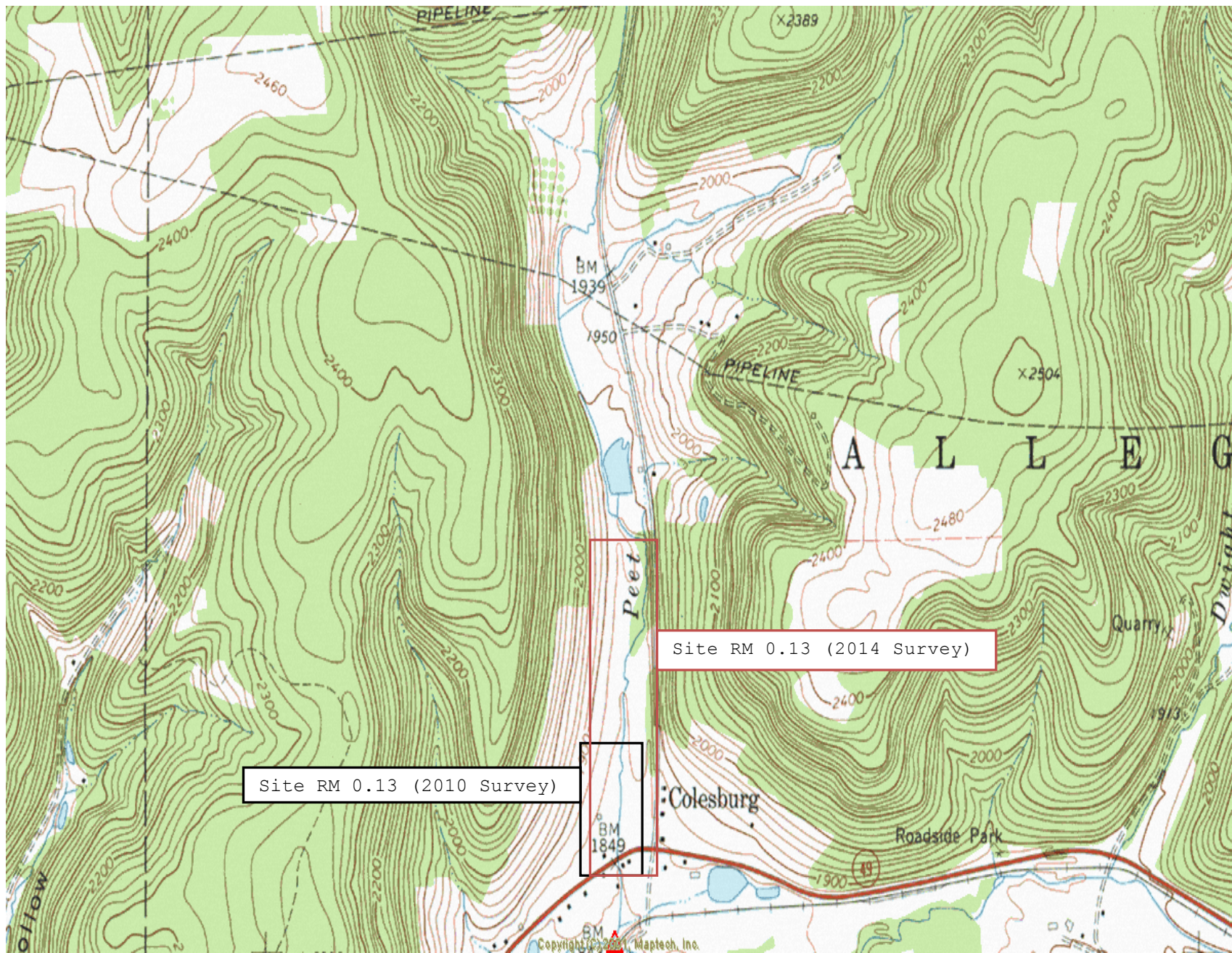


Figure 1. Location map for sample site RM 0.13 on Peet Brook (216C), Potter County in 2010 and 2014.