Distribution

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PA FISH AND BOAT COMMISSION
COMMENTS AND RECOMMENDATIONS
February 22, 2018

WATER: Potter Run (306A) Centre County

EXAMINED: June 12 and 17, 2013

BY: J. Detar, D. Kristine, J. Keslar, J. Allison, D. Nihart, K. Starks (PADEP)

Bureau Director Action: _____Date: _____

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AREA COMMENTS: Potter Run, Centre County, was found to support a Class A mixed wild brook and brown trout population in Section 01 and a Class A wild brown trout population in Section 02 during a 2013 survey of the stream at two sites in Section 01 and two sites in Section 02. The total length of stream sampled was 12 percent of the overall stream length. The excellent wild trout population supported by Potter Run warrants maximum protection against any future degradation to water quality, habitat, or biota due to encroachment, water withdrawal, or other impact.

AREA RECOMMENDATIONS:

1. Add Potter Run, Section 01, (from the headwaters to the DCNR Reservoir) to the Commission's Class A Mixed Wild Brook and Brown Trout Streams program.

2. Add Potter Run, Section 02, (from the DCNR Reservoir to the mouth) to the Commission's Class A Wild Brown Trout Streams program.

3. Manage Potter Run, Sections 01 and 02, as Class A wild trout stream sections under Commonwealth Inland Waters regulations with no stocking.

4. Add Potter Run to the PFBCs list of stream sections that support natural reproduction of trout from the headwaters downstream to the mouth.

5. Request the Department of Environmental Protection upgrade the Water Quality Standards designation of the entire Potter Run basin to High Quality – Cold Water Fishes and Migratory Fishes (HQ-CWF, MF) under 25 PA Code Chapter 93 based on the Class A qualifier found in 93.4b(2)(ii). Potter Run is currently listed as Cold Water Fishes and Migratory Fishes (CWF, MF) in 25 PA Code Chapter 93, which is an inadequate level of protection for the stream.

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

Potter Run (306A)
Sections 01 and 02
Fisheries Management Report

Prepared by
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Fisheries Management Database Name: Potter Run
Lat/Lon: 40°49'11"/77°37'37"

Date Sampled: June 12 and 17, 2013 Date Prepared: June 19, 2013

Introduction

Potter Run is located in Centre County and is a 12.13 km (7.54 mi) long tributary to Sinking Creek at River Mile (RM) 5.36, 40°49'11" latitude and 77°37'37" longitude. This stream has a drainage area of 21 km^2 (8.11 mi^2). Potter Run can be found on the Centre Hall, Spring Mills and Barrville PA United States Geological Survey 7.5 minute quadrangles (Figure 1). 5.01 miles (66%) of riparian land along the stream is publicly owned by the Commonwealth of Pennsylvania as part of Bald Eagle State Forest. The upper portion of the stream flows through an undisturbed and forested valley to a small reservoir used for irrigation by the DCNR Bureau of Forestry at the Penn Nursery. The stream then flows through a gap in the mountains along SR 0322 to the village of Potters Mills where the stream enters a limestone valley dominated by woodlots, agriculture, and residences. The current 25 PA Code Chapter 93 Water Quality Standards designation is Cold Water Fishes and Migratory Fishes (CWF, MF) for the entire stream.

Potter Run is divided into two sections for management purposes:

Section 01, 5.65 km (3.51 mi) from the headwaters downstream to the DCNR Reservoir.

Section 02, 6.49 km (4.03 mi) from the DCNR Reservoir downstream to the mouth.

Sections 01 and 02 were examined during June 2013 to gather contemporary information on the wild trout population for management and protection purposes.

Methods

The examination of Potter Run was conducted on June 12 and 17, 2013. Fish sampling procedures were carried out according to those outlined by Detar et al. (2011). Two sample sites in each section totaling 12% percent of the total stream length were sampled (Table 1).

Physical characteristics, water chemistry, and fish populations 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 modified DC Coffelt gas powered backpack at three sites (RM 0.31 2.60, and 5.04) while an Appalachian Aquatics DC battery backpack was used at site RM 4.41. Wild trout were measured and recorded in 25-mm (1 inch) 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 the Integrated Taxonomic Information System (http://www.itis.gov).

Results

RBP fish habitat scores ranged from 132 to 189 out of a possible 200 points (Table 2). Water temperature during time of survey ranged from 13.9 to 18.6°C, specific conductivity from the headwaters downstream to the mouth increased from 22 to 137 umhos/cm, pH ranged from 6.4 to 7.4 standard units, and total alkalinity from the headwaters to the mouth increased from 3 to 47 mg/l (Table 3). The water chemistry values reflect the increase in alkaline groundwater inputs in the lower half of the stream. A total of 14 fish species were captured throughout the entire stream length, including wild brook trout *Salvelinus fontinalis* and wild brown trout *Salmo trutta* (Table 4).

Five hundred and fifty-six wild brown trout, excluding recaptures, ranging from 25 mm to 399 mm in total length (TL) were captured during the electrofishing surveys with 183 (33 percent) being greater than or equal to the legal harvestable length (175 mm: 7 in) (Table 5). Total brown trout biomass was estimated to range from 27.36 to 146.77 kg/ha (Table 6). Brown trout abundance was estimated to range from 267 to 650 trout/km (430 to 1,046 trout/mi) with a range of 36 to 250 trout/km (58 to 402 trout/mi) being of legal length or longer (Table 6).

One hundred and forty-eight wild brook trout, excluding recaptures, ranging from 25 mm to 224 mm in total length (TL) were captured with 11 (seven percent) being greater than or equal to the legal harvestable length (175 mm: 7 in) (Table 7). No brook trout were

captured or observed at the most downstream site (RM 0.31) in Section 02. Total brook trout biomass was estimated to range from 0 to 13.53 kg/ha (Table 8). Brook trout abundance was estimated to range from 0 to 332 trout/km (0 to 534 trout/mi) with a range of 0 to 25 trout/km (0 to 40 trout/mi) being of legal length or longer (Table 8).

Discussion

Potter Run supported excellent wild trout populations and should be listed on the PFBC's list of stream sections that support natural reproduction of wild trout from the headwaters to the mouth based on the presence of both young-of-the-year and multiple year classes, as outlined in 58 PA Code §57.11. The average biomass of wild brook and brown trout at two representative sites in Section 01 was 13.28 kg/ha and 37.56 kg/ha, respectively for a combined biomass of 50.84 kg/ha, which met the minimum biomass criteria for designating Section 01 as a Class A mixed wild brook and brown trout stream, as outlined in 58 PA Code §57.8a. The wild trout population in Section 02 was dominated by wild brown trout with few brook trout present. The two-site mean biomass of wild brown trout was estimated to be 126.60 kg/ha, which met 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.

The current 25 PA Code Chapter 93 Water Quality Standards listing for Potter Run is Cold Water Fishes and Migratory Fishes (CWF, MF) from the headwaters to the mouth. This is an inadequate level of protection for this stream. Due to the significant wild trout resource which met Class A criteria for a mixed wild brook and brown trout stream in Section 01 and a wild brown trout stream in Section 02, the Chapter 93 designation should be upgraded to High Quality – Cold Water Fishes and Migratory Fishes (HQ-CWF, MF) for the entire Potter Run basin by the PA Department of Environmental Protection (DEP) upon listing by the Commission as a Class A Wild Trout Water.

Management Recommendations

1. Add Potter Run, Section 01, (from the headwaters to the DCNR Reservoir) to the Commission's Class A Mixed Wild Brook and Brown Trout Streams program.

2. Add Potter Run, Section 02, (from the DCNR Reservoir to the mouth) to the Commission's Class A Wild Brown Trout Streams program.

3. Manage Potter Run, Sections 01 and 02, as Class A wild trout stream sections under Commonwealth Inland Waters regulations with no stocking.

4. Add Potter Run to the PFBCs list of stream sections that support natural reproduction of trout from the headwaters downstream to the mouth.

5. Request the Department of Environmental Protection upgrade the Water Quality Standards designation of the entire Potter Run basin to High Quality – Cold Water Fishes and Migratory Fishes (HQ-CWF, MF) under 25 PA Code Chapter 93 based on the Class A qualifier found in 93.4b(2)(ii). Potter Run is currently listed as Cold Water Fishes) and Migratory Fishes (CWF, MF) in 25 PA Code Chapter 93, which is an inadequate level of protection for the stream.

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.

Table 1. Date surveyed, site description, and location of sample sites located on Potter Run (306A), Centre County, during June 2013.

Date	Rivermile	Section	Description	Length (m)	Mean Wetted Width (m)	Latitude	Longitude
6/12/2013	0.31	02	Site located approximately 415 m downstream of bridge on Upper Georges Valley Road	425	3.83	40.81638	-77.62453
6/12/2013	2.60	02	200 m downstream of UNT from Kohler Valley	400	3.80	40.79124	-77.62299
6/17/2013	4.41	01	185 m upstream of DCNR reservoir	260	2.98	40.77266	-77.62384
6/17/2013	5.04	01	190 m downstream of foot bridge across stream at DCNR camp	320	3.24	40.76798	-77.63269

Table 2. High Gradient Rapid Bioassessment Protocol ratings for Potter Run (306A), Centre County, during 2013.

	Site Rivermile			
Habitat Parameter	0.31	2.60	4.41	5.04
Epifaunal Substrate/ Available Cover	15	18	18	19
Embeddedness	11	16	17	18
Velocity/Depth Regime	16	18	16	16
Sediment Deposition	10	14	19	16
Channel Flow Status	17	19	20	19
Channel Alteration	10	15	20	20
Frequency of Riffles or bends	16	17	19	19
Left Bank Stability	7	9	10	9
Right Bank Stability	7	9	10	9
Left Bank Vegetative Protection	6	6	10	9
Right Bank Vegetative Protection	6	8	10	9
Left Bank Riparian Vegetative Width	5	5	10	10
Right Bank Riparian Vegetative Width	6	8	10	10
Total Score	132	162	189	183

Table 3. Water chemistries measured on Potter Run (306A), Centre County, during 2013.

Date	Rivermile	Water Temperature (C)	Specific Conductance (umhos/cm)	pH Standard Units)	Total Alkalinty (mg/l)
6/12/2013	0.31	18.6	137	7.4	47
6/12/2013	2.60	16.4	74	6.8	15
6/17/2013	4.41	13.9	27	6.4	12
6/17/2013	5.04	15.7	22	6.4	3

Table 4. Fish species occurrence in Potter Run (306A), Centre County at four sample sites during 2013.

		Site Rivermile			
Common Name	Scientific Name	0.31	2.60	4.41	5.04
Brown Trout	*Salmo trutta*	X	X	X	X
Brook Trout	*Salvelinus fontinalis*		X	X	X
Slimy Sculpin	*Cottus cognatus*	X			
Blacknose Dace	*Rhinichthys atratulus*	X	X	X	X
Longnose Dace	*Rhinichthys cataractae*	X	X		
White Sucker	*Catostomus commersonii*	X	X	X	X
Cutlips Minnow	*Exoglossum maxillingua*	X			
Tessellated Darter	*Etheostoma olmstedi*	X			
Brown Bullhead	*Ameiurus nebulosus*			X	
Creek Chub	*Semotilus atromaculatus*	X			
Rock Bass	*Ambloplites rupestris*	X			
Common Shiner	*Luxilus cornutus*	X			
Largemouth Bass	*Micropterus salmoides*		X		
Bluegill	*Lepomis macrochirus*			X	
Total Species		10	6	6	4

Table 5. Length frequency distribution of wild brown trout captured (excluding recaptures) at Potter Run (306A), Centre County, at four sample sites during our 2013 survey. These are raw catches per sample site, not standardized by distance or area.

Length Group (mm)	RM 0.31	RM 2.60	RM 4.41	RM 5.04	Total
25	4	9			13
50	7	28		5	40
75		1	15	26	42
100	8	15	29	34	86
125	32	72	5	8	117
150	37	30	2	6	75
175	21	6	2	12	41
200	4	16	3	8	31
225	9	18	2	4	33
250	11	11	1	3	26
275	11	4		2	17
300	18	6			24
325		3	1		5
350	4				4
375	2				2
Totals	169	219	60	108	556
$\geq$ 175 mm (7 in)	81	64	9	29	183

Table 6. Estimated abundance and biomass of wild brown trout in Potter Run (306A), Centre County, during 2013.

	Biomass (kg/ha)				Abundance (#/km)			
Length Group (mm)	RM 0.31	RM 2.60	RM 4.41	RM 5.04	RM 0.31	RM 2.60	RM 4.41	RM 5.04
25	0.03	0.08			9	23		
50	0.11	0.47		0.12	16	70		16
75		0.04	1.23	2.52		3	58	128
100	0.71	1.70	7.05	4.71	19	45	146	106
125	7.92	16.28	1.70	2.54	115	235	19	31
150	15.09	10.39	1.13	2.54	132	90	8	19
175	14.85	3.09	1.73	11.01	85	18	8	53
200	2.39	11.50	3.76	7.49	9	45	12	25
225	8.28	18.63	3.48	5.20	24	53	8	13
250	14.56	14.39	2.35	7.03	31	30	4	13
275	18.91	7.79		4.57	31	13		6
300	42.86	11.98			54	15		
325	2.35	10.05	4.93		2	10	4	
350	11.62				9			
375	7.10				5			
Totals	146.77	106.39	27.36	47.73	541	650	267	410
$\geq$ 175 mm (7 in)	122.91	77.43	16.25	35.30	250	184	36	110

Table 7. Length frequency distribution of wild brook trout captured (excluding recaptures) at Potter Run (306A), Centre County, at four sample sites during our 2013 survey. These are raw catches per sample site, not standardized by distance or area.

Length Group (mm)	RM 0.31	RM 2.60	RM 4.41	RM 5.04	Total
25			3	25	28
50			21	18	39
75			1	3	4
100			27	25	52
125			7	5	12
150			1	1	2
175			1	6	7
200		2		2	4
Totals	0	2	61	85	148
$\geq$ 175 mm (7 in)	0	2	1	8	11

Table 8. Estimated abundance and biomass of wild brook trout in Potter Run (306A), Centre County, during 2013.

	Biomass (kg/ha)				Abundance (#/km)			
Length Group (mm)	RM 0.31	RM 2.60	RM 4.41	RM 5.04	RM 0.31	RM 2.60	RM 4.41	RM 5.04
25			0.04	0.25			12	78
50			0.66	0.43			81	56
75			0.08	0.17			4	9
100			9.18	4.88			200	116
125			2.21	1.41			27	19
150			0.53	0.40			4	3
175			0.83	3.70			4	19
200		1.22		1.78		5		6
Totals	0	1.22	13.53	13.02	0	5	332	306
$\geq$ 175 mm (7 in)	0	1.22	0.83	5.48	0	5	4	25

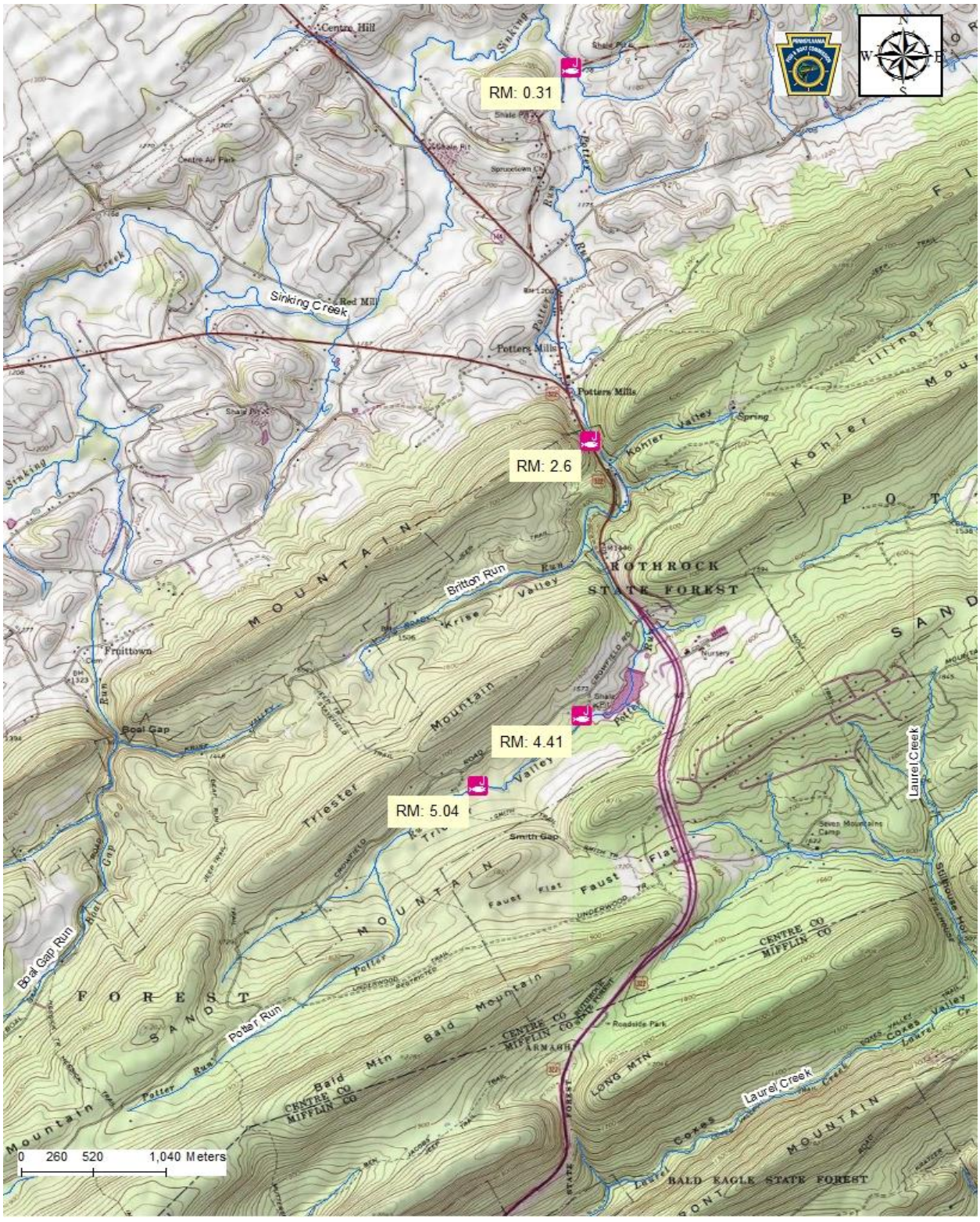

Figure 1. Map outlining locations of sample sites on Potter Run (306A), Centre County, during 2013.