

Distribution

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

February 22, 2018

WATER: Spencer Creek (216A) Erie County
EXAMINED: June 10, 2015
BY: Brian Ensign, Tim Wilson and Freeman Johns

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

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

A resurvey of Spencer Creek was conducted by Fisheries Management Area 2 staff following the 2013 survey conducted by Unassessed Waters Program cooperators that indicated a potential Class A wild Brook Trout population might be present in this stream. The 2015 survey estimated Brook Trout biomass at 49.39 kg/ha confirming that Spencer Creek does support a Class A wild Brook Trout population. Ten percent of the stream length was sampled.

AREA RECOMMENDATION:

1. Add Spencer Creek (16A), Section 01, from the headwaters downstream to the mouth on the PFBC's list of stream sections that support natural reproduction of trout.
2. Manage Spencer Creek (16A), Section 01, as a Class A wild Brook Trout Stream under Commonwealth Inland Waters regulations with no trout stocking.
3. Request the Department of Environmental Protection to designate Spencer Creek 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).
4. Work with Erie County Conservation District and local watershed groups to maintain and improve the quality of the habitat in Spencer Creek.

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**

Spencer Creek (16A)
Section 01
Fisheries Management Report

Prepared by
Brian A. Ensign

Fisheries Management Database Name: Spencer Creek
Lat/Lon: 41°55'09"/79°41'03"

Date Sampled: 06/10/2015

Date Prepared: October 08, 2015

Introduction

Spencer Creek is a small stream located in Erie County. It has a total length of 6.22 km (3.87 mi), a drainage area of 7.90 km² (3.05 mi²) and flows into the South Branch French Creek at River Mile (RM) 19.47, 41°55'09" latitude and 79°41'03" longitude (Figure 1). This stream can be found on the Corry PA-NY, PA United States Geological Survey 7.5 minute quadrangle.

Spencer Creek was initially surveyed by Allegheny College in 2013 as part of the Unassessed Waters Program 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 the presence of wild trout in streams is important in the proper permitting of land use activities and in the long-term restoration projects such as the Eastern Brook Trout Joint Venture. Spencer Creek is managed as a single section from the headwaters to the mouth and the riparian land along it is 100% privately owned.

Based on the results of the 2013 survey, which found a potential Class A wild Brook Trout population, a second survey was conducted in 2015 to confirm if a Class A wild Brook Trout population was present.

Methods

The re-examination of Spencer Creek was conducted on June 10, 2015 to confirm a Class A wild Brook Trout population. All procedures were carried out according to those outlined by Detar et al. (2011). One representative sampling station was sampled in 2015.

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 125 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. Wild trout abundance and biomass was determined using the number of trout captured from a single electrofishing pass. Scientific and common fish names reference the Integrated Taxonomic Information System (<http://www.itis.gov>).

Results

Site River Mile: 0.43

Sampling site RM 0.43 was located 164 m downstream of the Washington Street Bridge, 41°55'29" latitude and 79°40'53" longitude (Figure 1). The 627 m long station averaged 4.13 m in width (Table 1) and comprised 10 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 partial shade to the stream. Bank erosion was moderate and the stream substrate consisted primarily of gravel and sand. The stream channel had an adequate amount of woody debris, overhanging vegetation and undercut banks providing habitat. The RBP analysis yielded a final score of 168 (Table 2).

Physical-chemical parameters and their associated values measured under high flow conditions were as follows: air temperature 22.0°C, water temperature 9.5°C, specific conductance 122 umhos, pH 7.2 standard units, total alkalinity 68 mg/l, and total hardness 74 mg/l (Table 3).

Two fish species were captured at the site, including wild Brook Trout *Salvelinus fontinalis* and Mottled Sculpin *Cottus bairdii* (Table 4). Both fish species sampled were indicative of a coldwater environment.

Brook Trout

Five hundred and seven wild Brook Trout ranging from 25 mm to 324 mm in total length (TL) were captured during the survey. Eighty (16 percent) were greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brook Trout biomass was estimated to be 49.49 kg/ha. Brook Trout abundance was estimated at 810 Brook Trout/km (1,303 trout/mi) with 128 trout/km (206 trout/mi) being of legal length or longer (Table 5).

Discussion

Results of the 2015 survey indicated that Section 01 of Spencer Creek supported natural reproduction of Brook Trout and qualified for the Listing of Wild Trout Streams, as outlined in 58 PA Code §5711. The wild Brook Trout biomass determined from the 2015 survey met the Pennsylvania Fish and Boat Commission's minimum biomass criteria for a Class A wild trout stream, as outlined in 58 PA Code §57.8a., Class A Wild Trout Streams.

Spencer Creek supported an excellent wild Brook Trout population with a high abundance of young-of-the-year Brook Trout observed in 2015 and very good numbers of legal size Brook Trout, especially given of the small width of the stream.

Spencer Creek is a spring feed stream that maintains good flow to channel width ratio that concentrates flow and helps to keep water temperatures cold. However, because Spencer Creek parallels SR 0006 and Washington Street for much of its course, higher levels of sediment and embeddedness of substrate were found to be impacting instream habitat. Opportunities to minimize the negative effects of the highway on Spencer Creek should be considered to help preserve the habitat of this high quality wild Brook Trout fishery.

The current 25 PA Code Chapter 93 water quality standards listing of Cold Water Fishes (CWF) for the Spencer Creek basin does not adequately protect the existing flora and fauna present within the basin. Due to the significant wild trout resource, which meets Class A criteria, Spencer Creek should be upgraded to the High Quality-Cold Water Fishes (HQ-CWF) 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 Spencer Creek (16A), Section 01, from the headwaters downstream to the mouth on the PFBC's list of stream sections that support natural reproduction of trout.
2. Manage Spencer Creek (16A), Section 01, as a Class A wild Brook Trout stream under Commonwealth Inland Waters regulations with no trout stocking.
3. Request the Department of Environmental Protection to designate Spencer Creek 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).
4. Work with Erie County Conservation District and local watershed groups to maintain and improve the quality of the habitat in Spencer Creek.

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. Spencer Creek (16A), Erie County. Site sampling location, length surveyed, average site width and site area.

Site Date	RM	Downstream limit description	Length (m)	Ave. Width (m)	Site Area (ha)
6/10/2015	0.43	164 m downstream of Washington Street Bridge	627	4.13	0.26

Table 2. High Gradient Rapid Bioassessment Protocol ratings for Spencer Creek (16A), Erie County, conducted at RM 0.43 in 2015.

Habitat Parameter	Score
Epifaunal Substrate / Available Cover	19
Embeddedness	19
Velocity / Depth Regime	17
Sediment Deposition	16
Channel Flow Status	16
Channel Alteration	17
Frequency of Riffles or bends	19
Left Bank Stability	8
Right Bank Stability	7
Left Bank Vegetative Protection	8
Right Bank Vegetation Protection	7
Left Bank Riparian Vegetation Width	8
Right Bank Riparian Vegetative Width	7
Total Score	168

Table 3. Chemistries collected in Spencer Creek (16A), Erie County in 2015.

Date	06/10/2015
Site RM	0.43
Time (24 hour)	1000
Air Temperature (C)	22.0
pH Field Colorimetric (SU)	7.2
Specific Conductance (UMHOS)	122
Total Alkalinity Field Mixed Indicator (MG/L)	68
Total Hardness Field EDTA (MG/L)	74
Water Temperature (C)	9.5

Table 4. Fish species occurrence from Spencer Creek (16A), Erie County, at sample site RM 0.43 in 2015.

Common Name	Scientific Name	2015*
Brook Trout	<i>Salvelinus fontinalis</i>	
Mottled Sculpin	<i>Cottus bairdii</i>	Abundant

*-Subjective abundance indices were conducted on the first 300 m of the survey site in 2015.

Table 5. Wild Brook Trout catch and biomass estimates at sample site RM 0.43 on Spencer Creek (16A), Erie County, in 2015.

Length Group (mm)	Catch	Estimated Kg/ Ha	Estimated Number/Ha	Estimated Number/Km
25	74	0.30	286	118
50	282	2.68	1,089	450
125	16	1.51	62	26
150	55	8.73	212	88
175	23	5.67	89	37
200	19	6.79	73	30
225	26	13.14	100	41
250	6	4.16	23	10
275	3	2.72	12	5
300	3	3.79	12	5
Totals	507	49.49	1,958	810

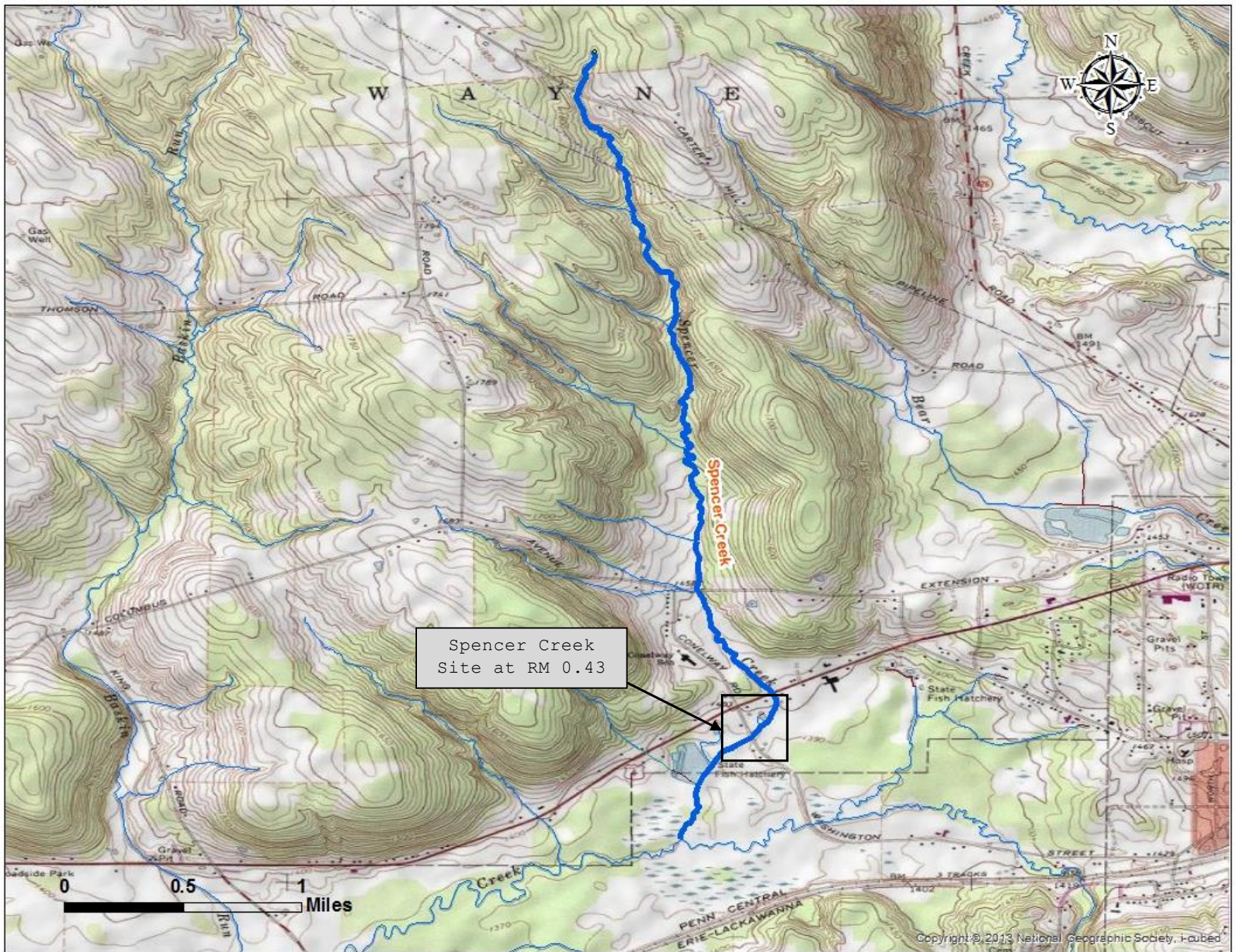


Figure 1. Location map for sample site RM 0.43 on Spencer Creek (16A), Erie County.