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

February 22, 2018

WATER: Beaver Run (308B)

Clearfield County

EXAMINED: August 04, 2015

BY: J. Detar, D. Kristine, Z. Salada, T. Blackman

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

CW Unit Leader Action: _____ Date: _____

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AREA COMMENTS: Beaver Run flows into the West Branch Susquehanna River in Clearfield County near Patchinville. Beaver Run, Section 01, was surveyed in 2015 to reinventory the wild trout population. The estimated biomass of wild Brown Trout was found to be 68.71 kg/ha and met the minimum biomass criteria for listing as a Class A wild Brown Trout stream. Eleven percent of the section length was sampled.

AREA RECOMMENDATIONS:

1. Add Beaver Run (08B), Section 01, (from the headwaters downstream to SR 3004 (Sylvis Road)) to the Commission's Class A Wild Trout Streams program.
2. Manage Beaver Run (08B), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Continue to list Beaver Run from the headwaters downstream to the mouth on the PFBC's list of stream sections that support natural reproduction of trout.
4. Request the Department of Environmental Protection designate Beaver Run, Section 01, as 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).

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**

Beaver Run (08B)
Section 01
Fisheries Management Report

Prepared by
David Kristine and Jason Detar

Fisheries Management Database Name: Beaver Run
Lat/Lon: 40°46'51"/78°46'48"

Date Sampled: August 04, 2015 Date Prepared: November 16, 2015

Introduction

Beaver Run is located in Clearfield County and is a 9.49 km (5.9 mi) long tributary to the West Branch Susquehanna River at River Mile (RM) 219.86, 40°46'51" latitude and 78°46'48" longitude. This stream has a drainage area of 64.01 km² (24.71 mi²) and can be found on the Barnesboro and Burnside, PA United States Geological Survey 7.5 minute quadrangles (Figure 1). The current 25 PA Code Chapter 93 water quality designated use for the entire stream is Cold Water Fishes and Migratory Fishes (CWF, MF). All of the riparian lands along the stream are privately owned. Beaver Run is managed as two sections:

Section 01: From the headwaters downstream to SR 3004 (Sylvis Road) (3.4 km, 2.1 mi). Managed under statewide regulations for wild trout with no stocking.

Section 02: From SR 3004 (Sylvis Road) downstream to the mouth (5.7 km, 3.5 mi). Managed as a Stocked Trout Water under Commonwealth Inland Waters regulations and is stocked preseason only with adult hatchery trout.

Beaver Run, Section 01, was surveyed in 2015 to gather contemporary information on the wild trout population for management and protection purposes.

Methods

The examination of Beaver Run, Section 01, was conducted on August 04, 2015. All procedures were carried out according to

those outlined by Detar et al. (2011). One representative sampling station was sampled in Section 01.

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 Electrobackpack equipped with a gas powered Coffelt BP 1C variable voltage electrofisher set at 75 volts Pulsed-DC. 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. Trout densities were determined by using the number of trout captured in a single electrofishing pass. Scientific and common fish names reference the Integrated Taxonomic Information System (<http://www.itis.gov>).

Results

Site River Mile: 4.75

Sampling site RM 4.75 was located 345 m upstream from Sylvis Road, 40°44'00" latitude and 78°45'40" longitude. The 355 m long station averaged 4.0 m in width and comprised 11 percent of the total section length (Table 1). This portion of the stream consisted of a dense Alder-lined thicket which provided excellent overhead cover for trout but made access and sampling difficult. Bank erosion was light but the stream bottom was heavily coated with silt and vegetation. The RBP analysis yielded a final score of 127 (Table 2).

Physical-chemical parameters and their associated values measured under normal flow conditions were as follows: water temperature 13.2°C, specific conductance 671 umhos, pH 7.3 standard units and total alkalinity 216 mg/l (Table 3).

Four fish species were captured at the site, including Brown Trout *Salmo trutta*, Creek Chub *Semotilus atromaculatus* Sculpin *Cottus spp.*, and White Sucker *Catostomus commersonii* (Table 4).

Brown Trout

Sixty-three wild Brown Trout ranging from 125 mm to 424 mm in total length (TL) were captured during the survey. Forty-nine (78 percent) were greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brown Trout biomass was estimated to be 68.71 kg/ha. Brown Trout abundance was estimated at 177 trout/km (285 trout/mi) with 138 trout/km (222 trout/mi) being of legal length or longer (Table 5).

Discussion

Beaver Run, Section 01, supported a dense population of wild Brown Trout. The estimated Brown Trout biomass determined from the survey met the Pennsylvania Fish and Boat Commission's minimum biomass criteria for listing as a Class A wild Brown Trout 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 and Migratory Fishes (CWF, MF) for Beaver Run, Section 01, does not adequately protect the existing flora and fauna present within this portion of the stream. Due to the significant wild trout resource which meets Class A criteria, Beaver Run, Section 01 should be upgraded to 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 Beaver Run (08B), Section 01, (from the headwaters downstream to SR 3004 (Sylvia Road)) to the Commission's Class A Wild Trout Streams program.
2. Manage Beaver Run (08B), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Continue to list Beaver Run from the headwaters downstream to the mouth on the PFBC's list of stream sections that support natural reproduction of trout.
4. Request the Department of Environmental Protection designate Beaver Run, Section 01, as 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).

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. SEPA. Report 814-99-002 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. Beaver Run (08B), Section 01, Clearfield County. Site sampling location, length surveyed, average site width and site area.

Site Date	Rivermile	Downstream limit description	Length (m)	Average Width (m)	Site Area (ha)
08/04/15	4.75	345 m upstream Sylvis Road	355	4.0	0.14

Table 2. High Gradient Rapid Bioassessment Protocol ratings for Beaver Run (08B), Section 01, Clearfield County, conducted at RM 4.75 on August 04, 2015.

Habitat Parameter Reported	Score	Habitat Parameter Reported	Score
1. Epifaunal Substrate / Available Cover:	10	8. (LB) Left Bank Stability (LB):	8
2. Embeddedness:	2	8. (RB) Right Bank Stability (RB):	8
3. Velocity / Depth Regime:	12	9. (LB) Left Bank Vegetative Protection:	10
4. Sediment Deposition:	2	9. (RB) Right Bank Vegetative Protection:	10
5. Channel Flow Status:	20	10. (LB) Left Bank Riparian Vegetative Width:	10
6. Channel Alteration:	15	10. (RB) Right Bank Riparian Vegetative Width:	10
7. Frequency of Riffles (or bends):	10		
Total Score: 127			

Table 3. Chemistries collected in Beaver Run (08B), Section 01, Clearfield County.

Parameter	Site 1
Site RM	4.75
Sample Date	08/04/2015
Time (24 hour)	1100
pH Field Colorimetric (SU)	7.3
Specific Conductance (umhos)	671
Total Alkalinity Field Mixed Indicator (mg/l)	216
Water Temperature (C)	13.2

Table 4. Fish species occurrence from Beaver Run (08B), Section 01, Clearfield County, at sample site RM 4.75 on August 04, 2015.

Common Name	Scientific Name
Brown Trout	<i>Salmo trutta</i>
Creek Chub	<i>Semotilus atromaculatus</i>
Sculpin species	<i>Cottus</i>
White Sucker	<i>Catostomus commersonii</i>

Table 5. Wild Brown Trout catch and biomass estimates at sample site RM 4.75 on Beaver Run (08B), Clearfield County, on August 04, 2015

Length group (mm)	Catch	Estimated Number/ha	Estimated kg/ha	Estimated Number/km
125	4	28	0.74	11
150	10	70	3.08	28
175	9	63	4.25	25
200	6	42	4.09	17
225	9	63	8.53	25
250	9	63	11.52	25
275	7	49	11.64	20
300	5	35	10.65	14
325	1	7	2.68	3
350	2	14	6.65	6
400	1	7	4.88	3
Totals	63	441	68.71	177

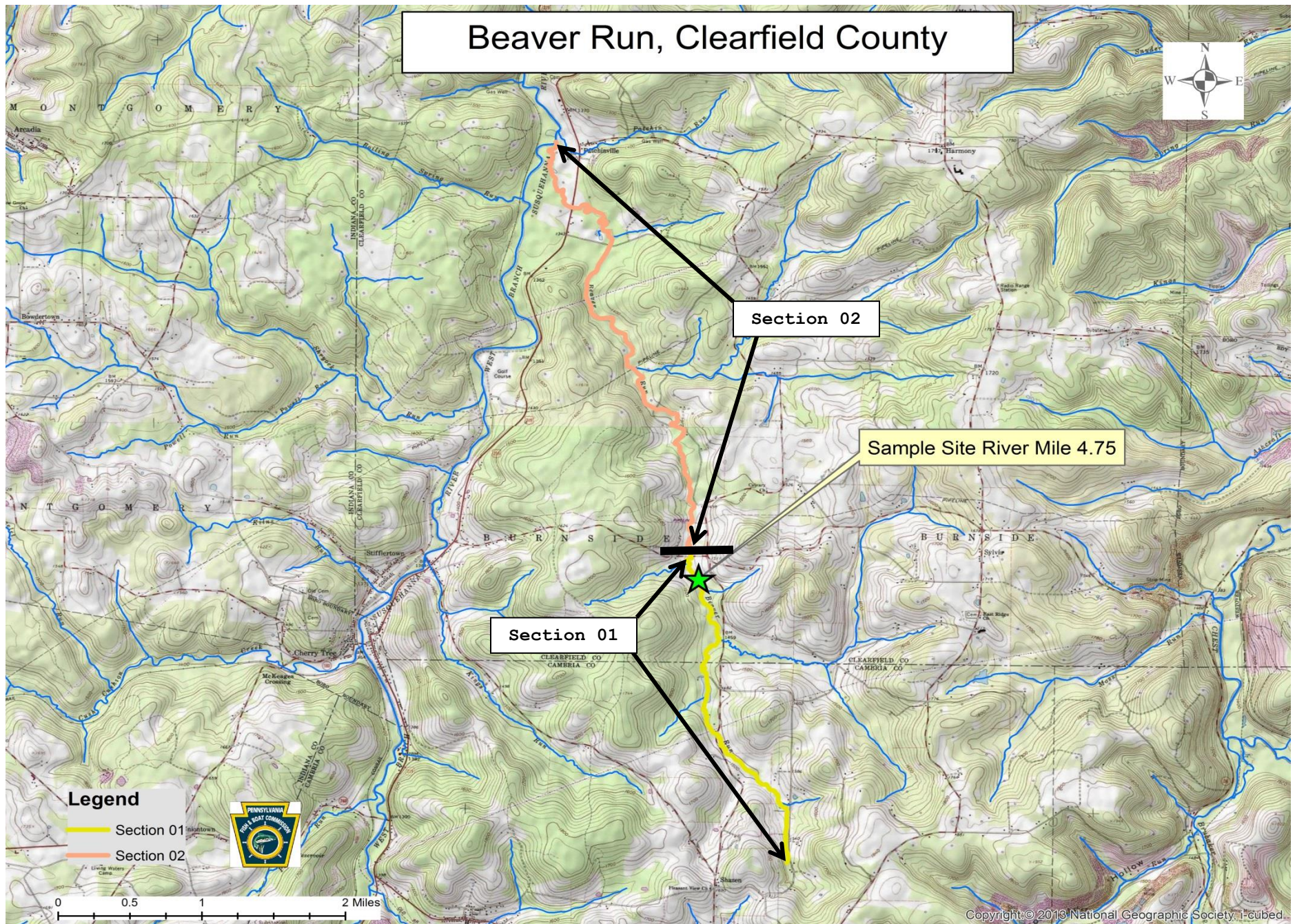


Figure 1. Location map for sample site river mile 4.75 on Beaver Run (08B), Section 01, Clearfield County.