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

February 22, 2018~~August 4, 2015~~~~April 12, 2015~~

WATER: Douglas Run (308B) Cambria and Indiana Counties
EXAMINED: August 28, 2014
BY: David Kristine, Jason Detar, and David Nihart

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

CW Unit Leader Action: _____ Date: _____

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AREA COMMENTS: Douglas Run is a small coldwater tributary to the West Branch Susquehanna River near the small towns of Greenwich and Garmantown, Cambria and Indiana Counties. The presence of both young-of-the-year and multiple year classes of wild Brook Trout and Brown Trout during our examination verified that this stream supports natural reproduction of trout. The estimated biomass of wild Brown Trout was 42.26 kg/ha and the estimated biomass of wild Brook Trout was 2.26 kg/ha. The wild trout biomass in Douglas Run met the minimum criteria for listing as a Class A wild Brown Trout stream. Ten percent of the stream length was sampled. 10% of the stream length was sampled.

AREA RECOMMENDATIONS:

1. Add Douglas Run (08B), Section 01, (from the headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.
2. Manage Douglas Run (08B), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Add Douglas 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 Douglas Run 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**

Douglas Run (308B)
Fisheries Management Report

Prepared by
David Kristine and Jason Detar

Fisheries Management Database Name: Douglas Run
Lat/Lon: 40°41'38"/78°48'21"

Date Sampled: August 28, 2014 Date Prepared: February 6, 2015

Introduction

Douglas Run is a small coldwater stream located in Cambria and Indiana Counties that flows into the West Branch Susquehanna River at River Mile (RM) 227.54. The stream has a total length of 4.32 km (2.68 mi) as depicted on the Barnesboro, PA United States Geological Survey 7.5 minute quadrangle. Douglas Run drains a watershed area of 5.5 km² (2.1 mi²; Figure 1) and the current 25 PA Code Chapter 93 Water Quality Standards designation is Cold Water Fishes and Migratory Fishes (CWF, MF) for the entire stream.

All of the riparian lands along Douglas Run are privately owned and the watershed consists of woodlots, reclaimed strip mines, and a few private residences. A review of PFBC files found a historical stream survey report which classified the stream as polluted (Sorenson 1931).

Douglas Run was surveyed during 2014 to gather initial information on the wild trout population for management and protection purposes as part of the Unassessed Waters Program.

Methods

The habitat, water chemistry, and fish communities of Douglas Run were examined on August 28, 2014 at one sampling site according to procedures outlined by Weber et al. (2011). Rapid bioassessment protocols (RBP) were used to assess the habitat in this stream (Barbour et al. 1999). Fish were captured using a pulsed DC battery backpack electrofisher and identified to species. All wild trout captured were enumerated by measuring their total length (TL) 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 for wild trout and their densities were determined

by using the number of fish 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: 0.18

Sample site RM 0.18 (40°41'35" latitude and 78°48'28" longitude) was located 310 m downstream of Mine Road. The 434-m long station averaged 1.6 m in width and covered ten percent of the stream length (Table 1). This portion of the stream flowed through portions of a former strip mine which is now reverting to field and forest. Cover for trout was mainly provided by large pools associated with bridge and culvert crossings, woody debris, rootwads, and boulders. The RBP habitat analysis yielded a final score of 149/200 (Table 2).

Water chemistry parameters and their associated values measured under normal flow conditions were as follows: water temperature 17.8°C, specific conductance 664 umhos, pH 7.8 standard units, and total alkalinity 123 mg/l (Table 3).

Eight fish species were captured in Douglas Run at this site including Blacknose Dace *Rhinichthys atratulus*, Bluegill *Lepomis macrochirus*, Brook Trout *Salvelinus fontinalis*, Brown Trout *Salmo trutta*, hatchery Brook Trout *Salvelinus fontinalis*, hatchery Rainbow Trout *Oncorhynchus mykiss*, Creek Chub *Semotilus atromaculatus* Longnose Dace *Rhinichthys cataractae*, and Slimy Sculpin *Cottus cognatus* (Table 4).

Fifty-three wild Brown Trout ranging from 50 to 399 mm in total length (TL) were captured with 12 (23 percent) being greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brown Trout biomass was estimated to be 42.26 kg/ha. Brown Trout abundance was estimated at 123 trout/km (198 trout/mi) with 28 trout/km (45 trout/mi) being of legal length or longer (Table 5). Nine wild Brook Trout ranging from 50 to 199 mm in total length (TL) were captured with one (11%) being greater than or equal to the legal harvestable length (175 mm: 7 in) (Table 5). Brook Trout abundance was estimated at 20 trout/km (32 trout/mi) with two trout/km (three trout/mi) being of legal length or longer. The total combined biomass of Brook Trout and Brown Trout was estimated to be 44.52 kg/ha. In addition one hatchery Brook Trout in the 325-mm length group and one hatchery Rainbow Trout in the 300-mm length group were captured.

Discussion

Douglas Run, which was long considered to be polluted with no wild trout potential, now supports self-sustaining populations of wild Brown Trout and Brook Trout. A large concrete box culvert on a defunct mining road located within our sample site is perched approximately five feet on the downstream side and serves as a

total upstream fish barrier. Removal of this barrier would help to ensure the long-term viability of the wild trout populations in Douglas Run. Douglas Run should be added to the PFBC's list of stream sections that support natural reproduction of wild trout based on the presence of both young-of-the-year and multiple year classes of trout as outlined in 58 PA Code §57.11., Listing of Wild Trout Streams. In addition, the estimated biomass of wild Brown Trout met the PFBC's minimum biomass criteria of 40 kg/ha for listing Douglas Run as a Class A wild Brown Trout stream as outlined in 58 PA Code §57.8a, Class A Wild Trout Streams. Thus, based on the wild trout biomass and sampling 10 percent of the perennial stream length, Douglas Run should be managed as one section from the headwaters to the mouth as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.

The current 25 PA Chapter 93 Water Quality Standards designation for Douglas Run is Cold Water Fishes and Migratory Fishes (CWF, MF). This is an inadequate level of protection for this stream. Due to the significant wild trout resource which meets Class A criteria, Douglas Run should be upgraded to the 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 Douglas Run (08B), Section 01, (from the headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.
2. Manage Douglas Run (08B), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Add Douglas 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 Douglas Run 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. USEPA. Report 814-99-002 Washington, DC.
- Sorenson, D. 1931. Stream survey report. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Weber, R., R. T. Greene, and D. Miko. 2011. Protocols for conducting biological assessments of unassessed trout waters. Pages 95-101 in D. Miko, editor. Sampling protocols for Pennsylvania's wadeable streams. Pennsylvania Fish and Boat Commission. Harrisburg, PA.

Table 1. Douglas Run (308B), Cambria and Indiana Counties. Site sampling location, length surveyed, average site width and site area.

Site Date	Rivermile	Downstream limit description	Length (m)	Ave. Width (m)	Site Area (ha)
8/28/2014	0.18	310 m downstream of Mine Road crossing	434	1.6	0.07

Table 2. High Gradient Rapid Bioassessment Protocol ratings for Douglas Run (308B), Cambria and Indiana Counties, conducted at RM 0.18 on August 28, 2014.

Habitat Parameter	Score	Habitat Parameter	Score
Epifaunal Substrate / Available Cover	16	Left Bank Stability	9
Embeddedness	15	Right Bank Stability	9
Velocity / Depth Regime	14	Left Bank Vegetative Protection	8
Sediment Deposition	14	Right Bank Vegetative Protection	8
Channel Flow Status	14	Left Bank Riparian Vegetative Width	6
Channel Alteration	13	Right Bank Riparian Vegetative Width	6
Frequency of Riffles or bends	17	Total Score	149

<u>Habitat Condition</u>	<u>Total Score</u>
Optimal	151-200
Suboptimal	101-150
Marginal	51-100
Poor	0-50

Table 3. Water chemistries collected in Douglas Run (308B), Cambria and Indiana Counties.

Parameter	Site 1
Site RM	0.18
Sample Date	08/28/2014
Time (24 hour)	1421
pH Field Colorimetric (SU)	7.8
Specific Conductance (UMHOS)	664
Total Alkalinity Field Mixed Indicator (MG/L)	123
Water Temperature (C)	17.8

Table 4. Fish species occurrence in Douglas Run (308B), Cambria and Indiana Counties, during 2014.

Common Name	Scientific Name
Blacknose Dace	<i>Rhinichthys atratulus</i>
Bluegill	<i>Lepomis macrochirus</i>
Brook Trout	<i>Salvelinus fontinalis</i>
Brook Trout-Hatchery	<i>Salvelinus fontinalis</i>
Brown Trout	<i>Salmo trutta</i>
Creek Chub	<i>Semotilus atromaculatus</i>
Longnose Dace	<i>Rhinichthys cataractae</i>
Rainbow Trout-Hatchery	<i>Oncorhynchus mykiss</i>
Slimy Sculpin	<i>Cottus cognatus</i>

Table 5. Wild Brook Trout and Brown Trout catch and biomass estimates at sample site RM 0.18 on Douglas Run (308B), Cambria and Indiana Counties, on August 28, 2014.

Length Group (mm)	Catch	Mean Weight (g)	Weight Used From	Estimated Kg/Ha	Estimated Number/Ha	Estimated Number/Km
Brook Trout						
50	2	2.46	StateMeanWt	0.07	29	5
75	4	5.95	StateMeanWt	0.34	57	9
125	1	24.44	StateMeanWt	0.35	14	2
150	1	41.09	StateMeanWt	0.59	14	2
175	1	63.92	StateMeanWt	0.91	14	2
Totals	9			2.26	128	20
Brown Trout						
50	2	2.54	StateMeanWt	0.07	29	5
75	35	6.37	StateMeanWt	3.19	501	81
100	3	14.34	StateMeanWt	0.62	43	7
150	1	43.86	StateMeanWt	0.63	14	2
175	2	67.18	StateMeanWt	1.92	29	5
200	2	97.08	StateMeanWt	2.78	29	5
225	3	134.92	StateMeanWt	5.79	43	7
275	2	236.71	StateMeanWt	6.77	29	5
325	1	381.79	StateMeanWt	5.46	14	2
350	1	472.91	StateMeanWt	6.77	14	2
375	1	577.62	StateMeanWt	8.26	14	2
Totals	53			42.26	759	123
Combined Species Totals						
	62			44.52	887	143

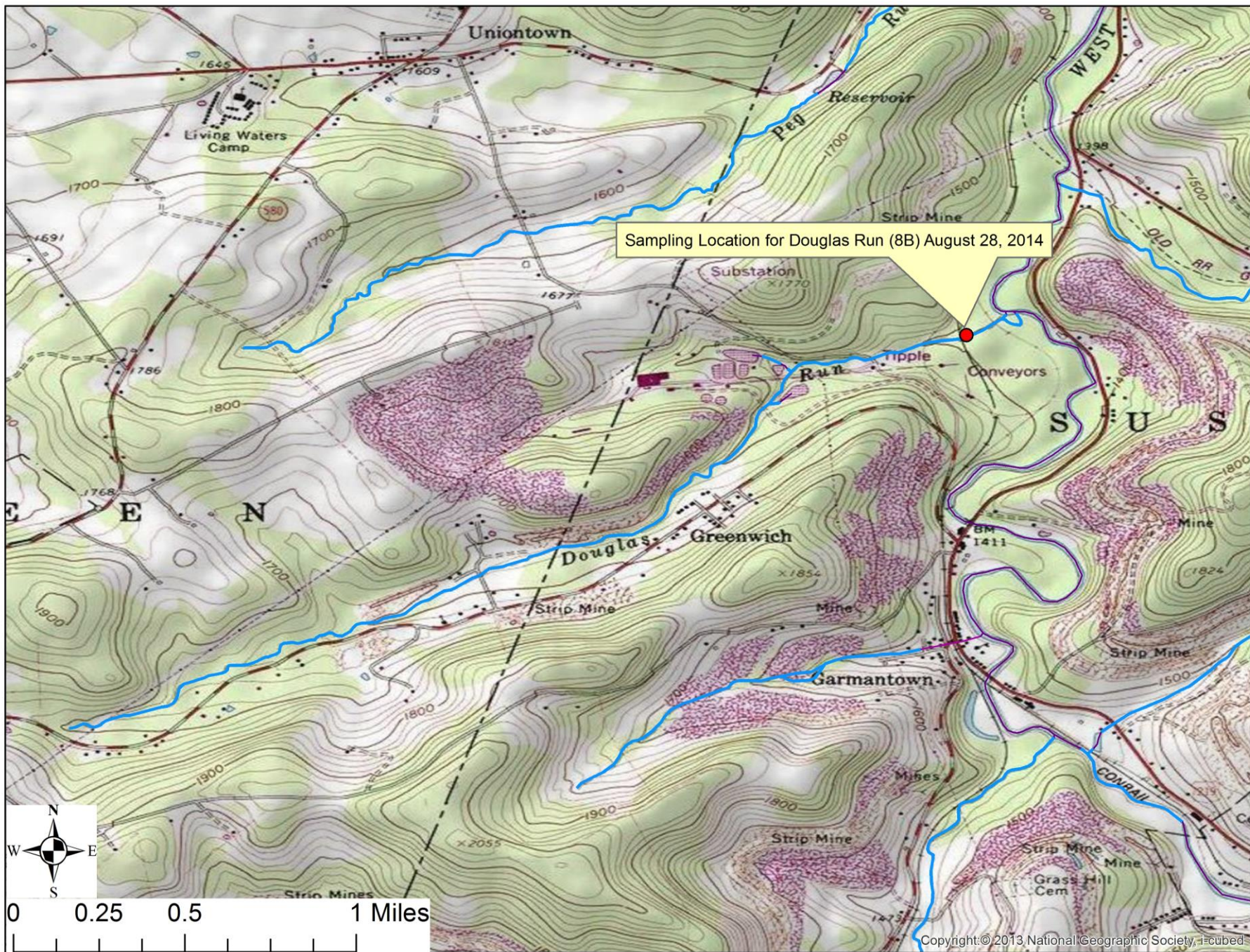


Figure 1. Location map for sample site river mile 0.18 on Douglas Run (308B), Cambria and Indiana Counties.