

Distribution

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PA FISH AND BOAT COMMISSION
COMMENTS AND RECOMMENDATIONS

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

WATER: Sand Run (309A) Tioga County
EXAMINED: September 29, 2014
BY: David Kristine, David Nihart, and Chad Lauer

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

CW Unit Leader Action: _____ Date: _____

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AREA COMMENTS: Sand Run is a small coldwater tributary to Wilson Run near Antrim in Tioga County. An Unassessed water survey in 2013 documented a high biomass wild Brook Trout population and the stream was re-evaluated in 2014 for potential Class A status. The estimated biomass of wild Brook Trout was 51.63 kg/ha and met the minimum criteria for listing as a Class A wild Brook Trout stream. Ten percent of the stream length was sampled.

AREA RECOMMENDATIONS:

1. Add Sand Run (09A), Section 01, (from the headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.
2. Manage Sand Run (09A), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Request the Department of Environmental Protection consider designating Sand 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).
4. Continue to list Sand Run from the headwaters downstream to the mouth on the PFBC list of stream sections that support natural reproduction of trout.

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**

Sand Run (309A)
Fisheries Management Report

Prepared by
David Kristine and Jason Detar

Fisheries Management Database Name: Sand Run
Lat/Lon: 41°38'23"/77°18'05"

Date Sampled: September 29, 2014 Date Prepared: March 3, 2015

Introduction

Sand Run is a small coldwater stream located in Tioga County that flows into Wilson Creek at River Mile (RM) 3.88. The stream has a total length of 3.33 km (2.07 mi) as depicted on the Antrim, PA United States Geological Survey 7.5 minute quadrangle. The current 25 PA Code Chapter 93 Water Quality Standards designation is Cold Water Fishes and Migratory Fishes (CWF, MF) for the entire stream. A stream survey in 2013 (Porta 2014) found the stream to support natural reproduction of Brook Trout and an abundant wild Brook Trout population and recommended further evaluation to see if the stream qualified for Class A designation.

The wild Brook Trout population of Sand Run was reinventoried during 2014 to determine possible Class A status and to gather contemporary information for management and protection purposes.

Methods

The habitat, water chemistry, and fish communities of Sand Run were examined on September 29, 2014 at one sampling site according to procedures outlined by Detar et al. (2011) (Figure 1). 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: 0.02

Sample site RM 0.02 (41°38'24" latitude and 77°18'04" longitude) was located upstream of the SR 0287 bridge. The 340-m long station averaged 1.8 m in width and covered ten percent of the stream length (Table 1). The RBP habitat analysis yielded a final score of 181/200 (Table 2).

Water chemistry parameters and their associated values measured under low flow conditions were as follows: water temperature 12.0°C and specific conductance 43 umhos (Table 3).

Two fish species were captured in Sand Run at this site including wild and hatchery Brook Trout *Salvelinus fontinalis*, and Slimy Sculpin *Cottus cognatus* (Table 4).

One hundred and fifty-nine wild Brook Trout ranging from 50-mm to 299-mm in total length (TL) were captured with 17 (11 percent) being greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brook Trout biomass was estimated to be 51.63 kg/ha. Brook Trout abundance was estimated at 468 trout/km (753 trout/mi) with 50 trout/km (80 trout/mi) being of legal length or longer (Table 5). In addition one hatchery Brook Trout in the 350-mm length group was captured.

Discussion

Sand Run was found to support an excellent wild Brook Trout population. The stream should continue to be listed on 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 Brook Trout met the PFBC's minimum biomass criteria of 30 kg/ha for listing Sand Run as a Class A wild Brook Trout stream, as outlined in 58 PA Code §57.8a, Class A Wild Trout Streams. Thus, based on the wild trout biomass and sampling greater than 10 percent of perennial stream flow, Sand 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 Sand 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, Sand 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 Sand Run (09A), Section 01, (from the headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.
2. Manage Sand Run (09A), Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.
3. Request the Department of Environmental Protection consider designating Sand 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).
4. Continue to list Sand Run from the headwaters downstream to the mouth on the PFBC list of stream sections that support natural reproduction of trout.

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, 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.
- Porta, M. 2014. Sand Run, Section 01, unassessed water report. Pennsylvania Fish and Boat Commission files. Bellefonte, PA.

Table 1. Sand Run (09A), Tioga County. 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)
9/29/2014	0.02	SR 0287 Bridge	340	1.8	0.06

Table 2. High Gradient Rapid Bioassessment Protocol ratings for Sand Run (09A), Tioga County, conducted at RM 0.02 on September 29, 2014.

Habitat Parameter	Score	Habitat Parameter	Score
Epifaunal Substrate / Available Cover	18	Left Bank Stability	10
Embeddedness	20	Right Bank Stability	10
Velocity / Depth Regime	16	Left Bank Vegetative Protection	10
Sediment Deposition	18	Right Bank Vegetative Protection	10
Channel Flow Status	14	Left Bank Riparian Vegetative Width	10
Channel Alteration	15	Right Bank Riparian Vegetative Width	10
Frequency of Riffles or bends	20	Total Score	181

<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 Sand Run (09A), Tioga County.

Parameter	Site 1
Site RM	0.02
Sample Date	9/29/2014
Time (24 hour)	1000
Specific Conductance (UMHOS)	43
Water Temperature (C)	12.0

Table 4. Fish species occurrence in Sand Run (09A), Tioga County during 2014.

Common Name	Scientific Name
Brook Trout	<i>Salvelinus fontinalis</i>
Brook Trout-Hatchery	<i>Salvelinus fontinalis</i>
Slimy Sculpin	<i>Cottus cognatus</i>

Table 5. Wild Brook Trout catch and biomass estimates at sample site RM 0.02 on Sand Run (09A), Tioga County, on September 29, 2014.

Length Group (mm)	Catch	Mean Weight (g)	Weight Used From	Estimated Kg/Ha	Estimated Number/Ha	Estimated Number/Km
50	55	2.46	StateMeanWt	2.26	920	162
75	33	5.95	StateMeanWt	3.29	552	97
100	23	13.69	StateMeanWt	5.27	385	68
125	29	24.45	StateMeanWt	11.85	485	85
150	2	41.09	StateMeanWt	1.37	33	6
175	9	63.87	StateMeanWt	9.61	151	26
200	3	92.56	StateMeanWt	4.64	50	9
225	3	130.87	StateMeanWt	6.57	50	9
250	1	179.45	StateMeanWt	3.00	17	3
275	1	225.56	StateMeanWt	3.77	17	3
Totals	159			51.63	2,660	468

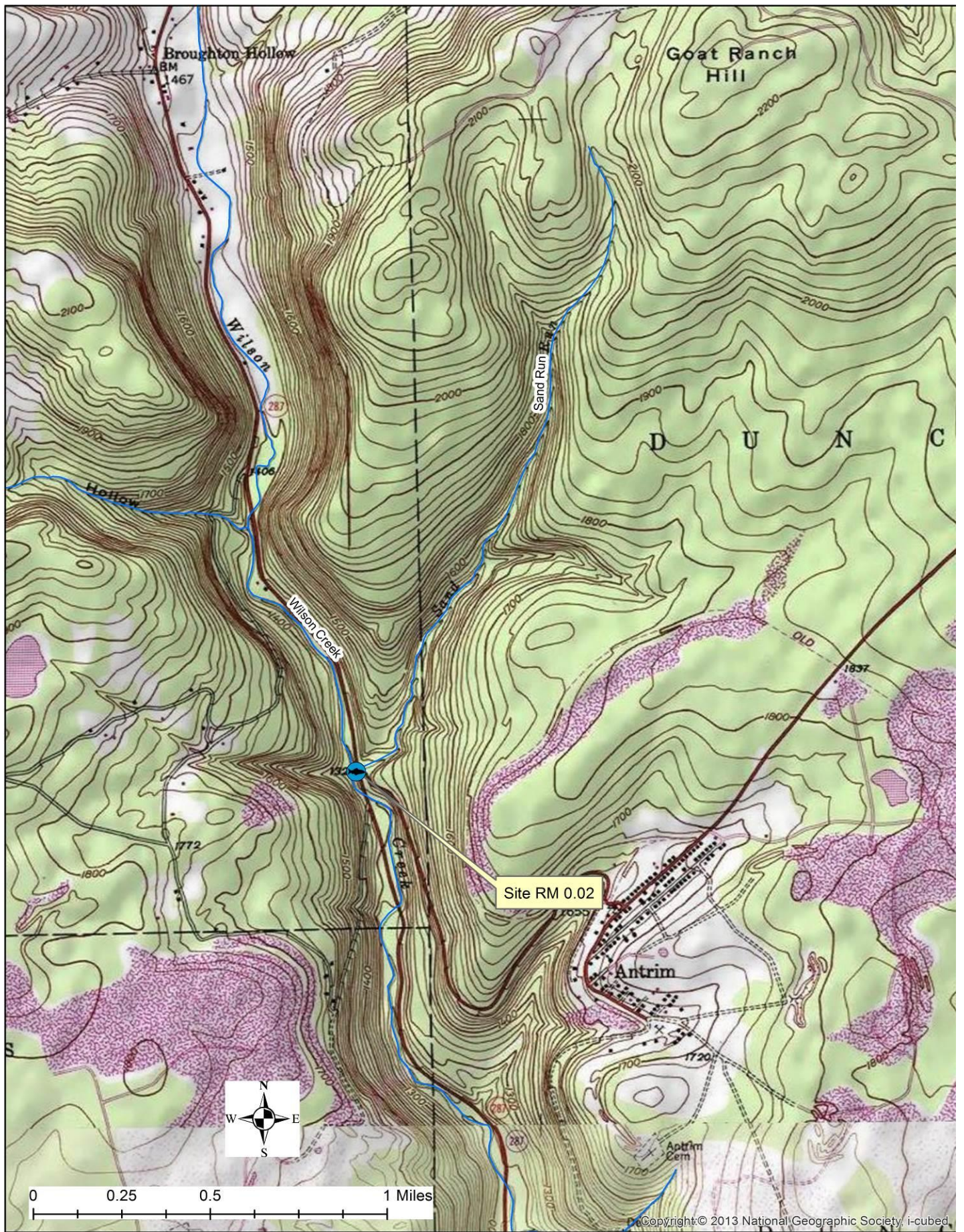


Figure 1. Location map for sample site river mile 0.02 on Sand Run (09A), Tioga County.